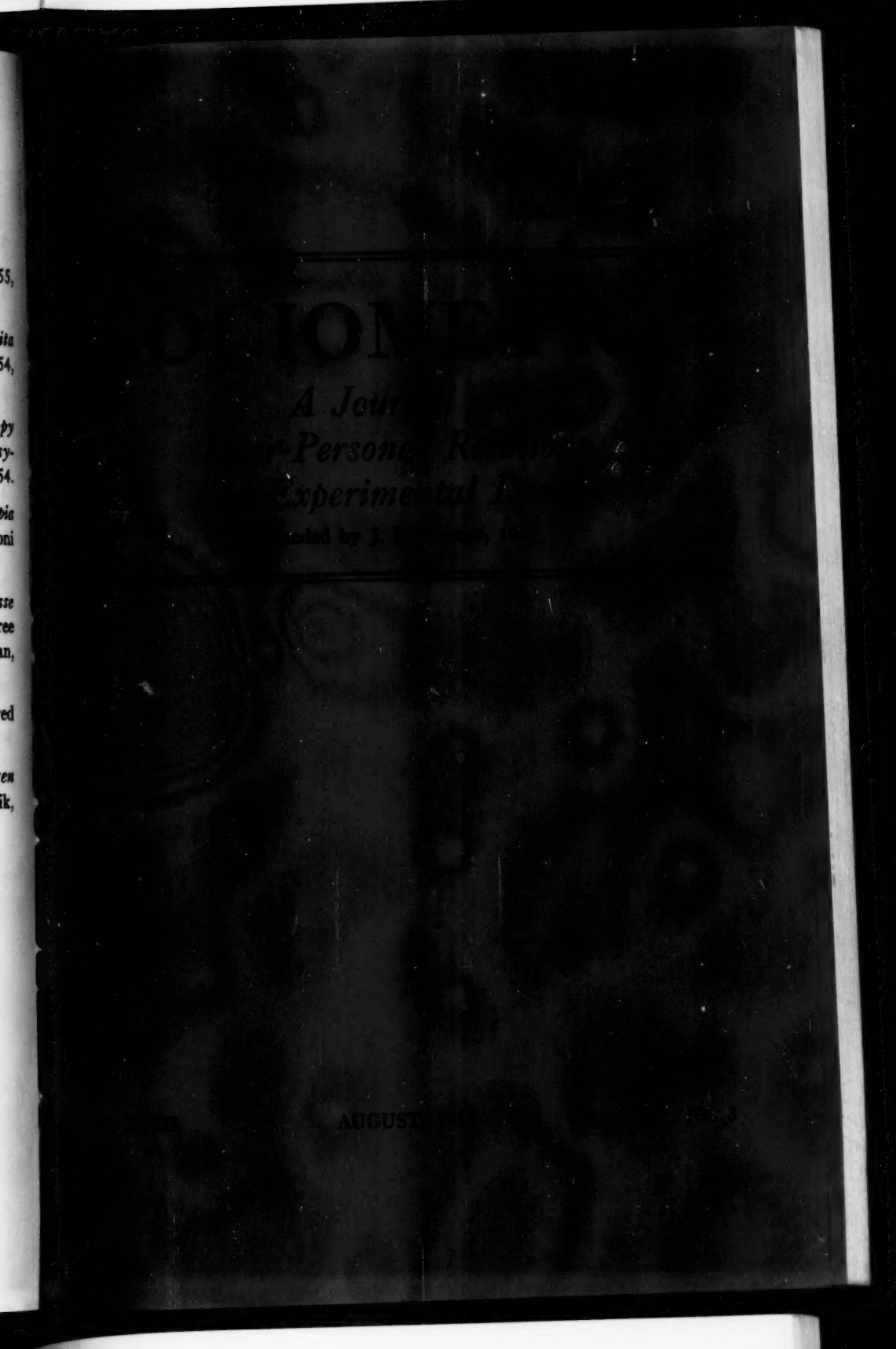

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CONTENTS

TRANSFER OF *SOCIOMETRY* TO THE AMERICAN SOCIOLOGICAL SOCIETY

The significance which this transfer has for the readers of SOCIOMETRY everywhere, as well as for the development of the social sciences makes the following release opportune at this time.

Correspondence between Dr. Donald Young, President of the American Sociological Society, and Dr. J. L. Moreno, Editor-in-Chief of SOCIOMETRY.

The following three letters are taken from the Correspondence between Dr. Donald Young and Dr. J. L. Moreno. The first letter presents the *proposal* of Dr. Moreno; the second letter the *acceptance* by Dr. Young; and the third letter the *confirmation* by Dr. Moreno.

December 11, 1954

Dr. Donald Young, President
American Sociological Society
New York University
New York 3, New York
Dear Dr. Young:

In 1937 I founded the journal SOCIOMETRY to serve as a medium for publishing the increasing volume of articles produced by workers in a range of disciplines dealing with problems in the field of sociometry. During the past seventeen years SOCIOMETRY has achieved a wide circulation and has come to be recognized as an important journal in the world of scholarly publications. The coverage of SOCIOMETRY has been with the measurement of social relations and social psychology beyond the more specialized conception of sociometry sometimes associated with my work.

From the beginning I have been closely associated with sociology in the United States and many prominent sociologists have contributed in important ways to the development of the journal. I have myself long been a member of the American Sociological Society and participated in its activities. The great increase in volume of productivity of sociologists in sociological measurement and social psychology lies within the field of interest to which SOCIOMETRY is devoted. The time has come when the Society may wish for additional provision of publication facilities in this area beyond those available in the *American Sociological Review*.

In the light of these developments I am prepared to tender to the American Sociological Society the journal SOCIOMETRY without stipulations

or conditions. I should, therefore, be happy if you will advise me of the action of the Society in this matter.

With my best wishes,

Sincerely yours,
J. L. MORENO
President
BEACON HOUSE INC.

April 14, 1955

Dr. J. L. Moreno
Beacon House, Inc.
P.O. Box 311
Beacon, New York
Dear Dr. Moreno:

In acknowledging your proposed gift of SOCIOMETRY to the American Sociological Society, I wrote you on December 22, 1954, that the matter was being referred to the Executive Committee and the Council of the Society for action. This has been done, and I am now in a position to convey to you the Society's favorable decision.

By action of the Council, I am now writing to accept the proffer to the American Sociological Society which you made in your letter to me of December 11, 1954. In doing so, I want to express to you the appreciation of the Society, with which you have been so long associated, for your generosity and concern for its needs. You may be sure that I know how deeply you are involved personally in this Journal which you founded and nurtured during the past 18 years. Whatever may be the risks and uncertainties, which necessarily attend its transfer to a new sponsorship, I hope that its virile development under the Society's auspicies will be a source of gratification to you in the years ahead. It is our intention to continue on the title page the words: "Founded in 1937 by J. L. Moreno", and I hope this meets with your approval.

In accepting this gift, I think it is proper to do so with the single additional provision that if at any time during your lifetime the Society for

any reason decides to discontinue this publication, the Journal will be returned to you or to Beacon House.

There remains, I assume, only the details incident to the transfer of operations to the Society. It is our judgment that the appropriate time for the Society to assume editorial and publication responsibility is at the close of the present volume for 1955, and I understand that this date meets with your approval. I am asking the Secretary of the Society, Professor Wellman J. Warner, and its Executive Officer, Mrs. Matilda White Riley, to act for the Society in working out any other needed transfer arrangements with your representative.

Sincerely yours,
DONALD YOUNG
President

April 23, 1955

Dr. Donald Young, President
The American Sociological Society
New York University
Washington Square
New York 3, N. Y.
Dear Dr. Young:

I acknowledge your letter of April 14, and am happy to hear that the Council of the American Sociological Society has accepted the proffer made by me.

I join with you in the hope that the development of the journal SOCIOMETRY under the Society's auspices will carry out the objectives which we have shared in this important field. The intention of the American Sociological Society to continue on the title page "Founded in 1937 by J. L. Moreno" has my full approval but I presume that it carries the meaning that it refers not only to myself, but includes all who have helped in the researches with which it is identified.

If the Society should decide at any time to discontinue publication of SOCIOMETRY it may be returned to Beacon House or myself.

I agree to the decision that the Society is to assume editorial and publicational responsibility of SOCIOMETRY with its 19th volume at the close

of 1955. I am glad to hear that you have asked the Secretary of the Society, Professor Wellman J. Warner, and its Executive Officer, Mrs. Matilda White Riley to act for the Society in working out any other needed transfer arrangements with our representative.

Sincerely yours,
J. L. MORENO
President
BEACON HOUSE INC.

THE VALIDITY OF SOCIOMETRIC RESPONSES

JANE SRYGLEY MOUTON, ROBERT R. BLAKE AND BENJAMIN FRUCHTER
The University of Texas

Sociometric responses have been studied to determine their relationship with variables that are classifiable as performance criteria. Results thus far obtained suggest that the sociometric type score may have considerable value as a basis for predicting a variety of criteria that evaluate performance. Investigations dealing with the validity of sociometric responses, involving studies conducted within the industrial setting, in military organizations, and in educational situations, including summer camps, are summarized in the present paper.

TYPES OF INVESTIGATIONS SUMMARIZED

Some of the investigations to be presented were conducted under field conditions with no effort made to control sources of variance that would result in spurious relationships between the variables under examination. Others were designed specifically to evaluate the degree of relationship between sociometric responses and criterion measures under specifiable conditions. Techniques of data analysis range from interpretive judgments unsupported by tests of significance concerning the validity of sociometric responses to the use of detailed statistical tests for determining the relationship between the variables under investigation.

Studies summarized in this report are of two types. They include validation for distributions of sociometric choices received by individuals and distributions of sociometric choices received by groups. Investigations were included if the criterion measure used for validation purposes was based on a behavioral or performance measure or on observers' ratings of behavior where such judgments could be considered as independent of the sociometric test responses of such variables as personality test data, intelligence test scores, or socio-economic status, age, or sex are excluded. Also excluded are reports analyzing perceptual judgments as contrasted with direct sociometric choices.

RELATIONSHIPS BETWEEN SOCIOMETRIC RESPONSES RECEIVED BY INDIVIDUALS AND PERFORMANCE CRITERIA

Studies based on the distribution of choices received by individuals are presented in Table 1. The situations in which the investigations were conducted serve as the basis for subgroupings. The first section reports in-

TABLE 1

EVALUATION OF THE RELATION BETWEEN SOCIOMETRIC RESPONSES RECEIVED BY INDIVIDUALS AND A VARIETY OF INDIVIDUAL PERFORMANCE MEASURES

Section 1: Studies in Industry

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
Van-Zelst (1952) (38)	2 work groups of 38 carpenters & 36 brick-layers.	Checks made for stability & re-grouping of teams. Teams which were mutual 1st choices made no changes; 2nd—1 change; 3rd—4 voluntary changes and 6 to incorporate new workers. Worked together 5 months on the job.	Listing of 3 choices for teammates in the 2-man work-teams which were then joined into 4-man groups.	Cost of house construction index; engineers' estimates; monthly turnover records; all compared with a previous 9-month period.	After voluntary re-grouping, a superior level of out-put. Drop in rate of turnover, 5% savings in total production.
Springer (1953) (35)	100 male candidates for leadman in North American Aviation.	Rated by 3 co-workers who were not candidates for leadman.	5-point near-sociometric scale on job performance and knowledge co-operation, ability to train others, and suitability for promotion to leadman.	2 supervisors rated each candidate for same variables as used by co-workers.	Relationship between ratings of each candidate by 1 supervisor and 1 co-worker (these ratings chosen at random from those available). job knowledge 15 job performance quality .25* quantity .33* cooperation .33*

TABLE 1 (*continued*)

TABLE 1 (*continued*)

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
					fitness for promotion .39* Supervisors' ratings were more conservative and more reliable than co-workers. Correlations with asterisks are significant.
Van-Zelst (1952) (39)	4 work groups. 2 of carpenters (20, 19), 2 of bricklayers (16, 16).	One group with a group of carpenters and bricklayers was a control; experimental group re-grouped by choice. The groups had been previously equated; covered a 3-month period.	Experimental groups chose work partner.	Job satisfaction, turnover rate, index of labor cost, index of materials cost.	Experimental group was superior on all 4 criteria. Turnover rate very low (critical ratio 14.65). Financial savings such that every 29th house was "free," relative to cost of construction by control group.
Van-Zelst (1951) (37)	60 carpenters & bricklayers in 4 groups.	5-point paper-pencil scale, filled in anonymously.	Rating co-workers on desirability as work-partners; like & dislike.	Kerr *Tear Ballot for Industry*.	Popular workers were satisfied with jobs, more secure, better attitude toward management and co-workers; more confidence in management and in supervisors.

TABLE 1 (*continued*)

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
Speroff & Kerr (1952) (34)	44 Negro & 46 Spanish-speaking manual workers in a steel mill. In work groups of 6 each.	Men knew each other well. Choices made within racial groups.	With whom would you like to work most? Least?	Number of accidents during 3 years previous.	Index of desirability (Likes squared minus number of dislikes squared) was correlated with the number of accidents. Correlation of —.54 between interpersonal desirability index and number of accidents. Least desirable workers have more accidents.
Gullahorn (1952) (17)	12 clerical workers in an office of 37.	No limit to number; 3 usually chosen as maximum. One hour interview with each worker.	Choice for best friend.	Amount of direct interaction as recorded by an observer over a 2-week period.	Interaction most related to spatial distance & next most to friendship choices.

TABLE 1 (*continued*)
Section 2: Military Studies

			Sociometric	Performance	Results and

TABLE 1 (*continued*)
Section 2: Military Studies

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
Halpin (1954) (18)	353 aircrew members in 52 B-29 crews.	Tested at MacDill AFB in 1950, 33 retested in Japan in 1951. "Forming new crew" question given to 27 crews.	Revised form of Hemphill & Coon's Leader Behavior Description Questionnaire. Scores: Consideration and Initiating Structure-in-interaction. Crews asked with whom they'd like to form a new crew. Satisfaction of each crew with its Commander computed.	Rating of performance by a squadron & wing commander.	Both in training and combat a trend toward negative correlation between superiors' ratings & the Consideration scores, and positive correlation between these ratings and the Initiating-Structure scores. Crew Satisfaction index was the reverse; correlated positively with Consideration and negatively with Initiating Structure.
Hollander (1954) (22)	9 sections of cadets at Naval Pre-Flight School N = 268.	After 3 months of training.	Nominate 3 cadets as *best* & *least* qualified for hypothetical student commander. A leadership score for each was derived.	Officer-like qualities (e.g., military bearing).	Officer-like qualities correlated with leadership scores +.55; with authoritarian r —.06
Hoffman & Rohrer (1954)	Marines being screened at OCS. Group	Each group had 6 platoons.	Group I wrote a descriptive paragraph about 1st 5 and last	Platoon standing given each member by platoon officer.	Rho coefficient between Group II scores & criterion of .84. Scale then used on Groups III

TABLE 1 (*continued*)

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
(19)	I-518 (1951), Group II-172 (1952), Group III-142 (late 1952), Group IV-145 (early 1953) in platoons of about 45.		5 choices for good officers. From these a 4-point scale drawn up, refined & keyed after testing on Group II, then validated on Groups III and IV.		& IV with following results: Platoon N Rho A 47 .88 B 49 .78 C 46 .84 D 49 .84 E 49 .90 F 47 .85
Rigby, Hoffman, Rohrer, Wilkins (1953) (29)	145 Marine Corps enlisted men going through a screening course.	Two criteria given at end of week for each of 3 weeks. Third given only once.	Peer rankings of potential affectiveness as officers. Nomination of peers for 17 social and military tasks. Peer Evaluation Scale.	Rank order of members representing pooled judgments of Marine Corps assessment staff.	The three sociometric measures highly related to each other and to the criterion.
Goodacre (1951) (14)	12 6-man squads in the Army.	6-man groups given tests before going into field to do a military problem.	Choice of buddies in social, garrison and tactical situations.	Success in 12 field problems.	Rho Field score & Garrison .62 Field score & Social .78 Field score & Tactical .75 Field score & Group Cohesion .77
Hemphill & Sechrest	94 B-29 aircrews in com-	Testing done in the Pacific com-	Make up air crew from the squadrons by se-	Average circular error bombing	Correlations between sociometric nominations and

TABLE 1 (*continued*)

Sociometric	Performance	Results and

TABLE 1 (*continued*)

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
(1952) (20)	bat.	bat area.	lecting crew members for each position. "On-crew," vs. "off-crew" index computed for each man.	data from combat missions were obtained from official records.	bombing accuracy, .36
Zaleny (1947) (42)	48 cadet observers in AF flying school.	5 choices, 5 rejections	Would you like to fly in a team with the other cadets?	Success as cadets avoiding of accidents.	High status cadets usually chosen as flight leaders. High status cadets showed high flying ability. Low status cadets had more crashes.
Williams & Leavitt (1947) (41)	1,193 Marine Corps Officer Candidates. 240 OCS student and 100 combat platoon leaders in experiment.	Judgments by platoons made, at end of 2 and 5 weeks of OCS. Nominate 5 best & 1 worst in platoon.	All-round ability as a combat officer. Personal traits, desirability as a roommate, sense of humor, fairness in making military court decisions, leadership in an emergency.	OCS pass-fail. Ratings of combat proficiency by superiors immediately following military campaign.	Sociometric judgments after 2 weeks of OCS correlated .33 with pass-fail (N = 240), .47 with combat ratings (N = 100). Sociometric judgments after 5 weeks of OCS correlated .40 with pass-fail (N = 1193, .43 with combat rating (N = 100).
Wherry & Fryer (1949) (40)	2 groups of 82 & 52 officer candidates.	Nomination at end of 1 month of OCS.	Nominations for most and least desirable as officers.	Retention in OCS for 2 months. Academic grades, graduation.	Correlation of nominations with retention in OCS at the end of the 2nd month, .70; with graduation, .49.
Dugan (1953)	167 crew-members of	1 peer rating in training, 1 while	Peer rating.	In training: proficiency tests,	Highest correlations between proficiency scores in training

TABLE 1 (*continued*)

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
(7)	29 B-29 air-crews.	in combat.		ratings of in-structors and flight checks. In combat; ratings from superiors.	and peer ratings of proficiency in combat.
French (1951) (11)	16 companies of Naval Recruits. 42-45 men in each. N = 860.	Data collected from 4 companies at the end of 1st and 10th weeks; 4 others at end of 2nd and 10th weeks; 4 others at end of 5th and 10th weeks; 4 others at end of 10th week only. Length of course, ten weeks.	Nominations for man to go on liberty with; to volunteer with for a tough and danger-ous assignment; nominations for job of acting chief petty officer.	Sick bay attendance of men and number of disciplinary offenses.	Status in company negatively and significantly related to sick bay attendance and disciplinary offenses. Sick bay attenders less acceptable as liberty companions, but equally acceptable as leaders. Disciplinary offenders less acceptable in all situations, but not consistently as mission companions and leaders. Correlations with sick bay attendance appear during 1st week of training; with disciplinary offenses after 2nd week.
Izard & Rosenberg (1954) (24)	168 Naval Cadets in 1 group, 332 in another.	Test 1 to Group I, 2 to Group II.	Long form, 420-item forced-choice personality test scored for leadership. Short form, 106 items.	Aptitude-for-Service ratings.	Correlation between test and criterion: Group I .26 Group II .28

TABLE 1 (*continued*)
Section 3: Studies in Educational Situations

TABLE 1 (*continued*)
Section 3: Studies in Educational Situations

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
Carter & Nixon (1949) (6)	100 boys from 2 high schools.	Questionnaire sent to each boy after he had worked at 3 tasks with a boy he didn't know. He was to answer anonymously & return his nominations.	Which 5 of the 50 boys from your school would you pick as a leader in an intellectual, a clerical, and a mechanical situation?	Work score on tasks done in pairs as rated by 2 observers; rating by school supervisors. Score on activities done in high school, i.e., clubs, etc.	Generally low correlation between criteria. Leadership in intellectual and clerical tasks tend to be associated with each other more than leadership in mechanical tasks. Correlation of leadership scores & other criteria: Supervisor's ratings: 1 School 2 Intellectual .53 .43 Clerical .66 .56 Mechanical .51 .68 Activity score 1 School 2 Intellectual .50 .29 Clerical .60 .44 Mechanical .51 .65
Bass & White (1951) (1)	87 members of a college fraternity.	Rating done on ballots—high middle, and low.	7 items. Selecting who runs things in the fraternity. Whom would you select to address an audience, etc.?	47 members who participated in "leaderless group discussions," 2 observers rated each of 8 in a group as	Sociometric test and observers' choices correlated between .25 and .60 (rho).

TABLE 1 (*continued*)

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
				to who led the discussion.	
Gibb (1950) (13)	10 groups of college students, 20 groups from OCS at Lackland AFB.	Each group met for 3 3-hour sessions. Questions given during and at end of sessions.	Sociotelic & psychotelic types of sociometric ratings of co-members. Each group chose a leader, then re-chose if they wished. Sociometric questions as to member preferred for a friend, etc.	Rated for leadership by 2 non-participant observers.	Correlation between psychotelic & sociotelic .70; between leadership ratings and sociometric .45; between leadership ratings & psychotelic .42. Sociotelic group more inclusive than psychotelic. Leadership, i.e., influencing behavior, cannot be measured by sociometric tests, only sociotelic or psychotelic criteria.
Lippitt, Polansky & Rosen (1952) (26)	64 boys, 40 girls—1948. Lower socio-economic background. Disturbed children, 63 boys & 65 girls —1950 Middle class, not disturbed. All in summer camps.	1st and last weeks of 4-week camp session. Data collected by picture-ranking technique.	1st study a composite study of attributed power. 2nd study "Who has influence?" Ranking technique by cabins of 8 members.	Frequency of successful influence attempts and the frequency of contagion initiation observed & coded by adults.	Real consensus in each group on who ranks where. 1948 study average Population N rho M-camp 64 .52 8 groups Boys w-camp 40 .71 8 groups Girls

TABLE 1 (*continued*)

TABLE 1 (*continued*)

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
Polansky, Lippitt & Redl (1950) (27)	8 boys & 8 girl groups in 2 camps for low socio-economic disturbed children 11-15 years in age.	Test by personal interview with each.	Sociometric ratings by each of degrees of liking, prestige of the others.	Observers watched groups to determine influencing behavior, status indicators, & incidents of contagion. The camp counsellors rated children as to: Adult relatedness group relatedness impulsiveness group belongingness need feeling of acceptance by group	Relationship of Prestige to Observed influence: Contagion Influence Frequency of Successful Influences Influence Attempts Average Rho .61 .55 .49
Rosen (1953) (32)	16 cabin groups of pre- and young adolescent boys in 2 4-week camps. 1 group of 63 assumed maladjusted due to agency referrals, other 65 adjusted.	Individual interviews.	Rank cabin members, including selves, on "who is best at getting the others to do what he wants them to do."	2 research teams observe influence behavior daily.	Better adjusted boys more perceptive than the others about their own and others behavior have greater power attributed to them. Are actually observed to be relatively more successful in influencing others.

TABLE 1 (*continued*)

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
Hunt & Solomon (1942) (23)	2 groups of boys age 5-8, 23 in one group, 22 in the other. High middle class backgrounds. 8 weeks at camp.	Sleeping & seating arrangements made 1st day, interviews repeated each week.	Sleeping & seating choices; interviews on whom each liked best.	Ratings by camp counsellors on personal traits; generosity, physical attractiveness, ordered activity, obedience to counsellors, lack of egocentricity.	Frequency of altering choices of best liked declines like a trial & error curve. All personal traits rated except obedience to counsellors were significant. Prestige slightly correlated with group status.
Lippitt (1941) (29)	45 children in 3 groups. Preschool age.	Testing done in school after children were acquainted with investigator, 5 retested after 6 weeks	Each child asked to cite preference for one of two names in a pair. Every name paired with every other.	Teacher ratings of child's popularity. A battery of other tests.	Correlation of pupil preference & teacher rating for the 3 groups: .23±.17, .54±.17, and —.07±.14. Child ranking of popularity with coöperation: .44±.15; .65±.14; .24±.14. Popularity with peers unrelated to constructive-destructive situation, gross motor items, amount of direction and compliance, amount of interaction. Low positive correlation with paper cutting.
Bonney & Powell	10 sociometrically ranked	As many choices as desired.	Choices for work and play.	Observation of behavior and classifi-	Only 5 of the 25 behavior categories showed signifi-

TABLE 1 (*continued*)

TABLE 1 (*continued*)

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
(1953) (4)	high & 10 sociometrically ranked low children from a group of 42, first grade.			cation into behavior categories in 7 10-minute and 11-minute periods over 4 months.	cant difference between the 2 groups. Highly acceptable more likely to be conforming in class, smile more often, coöperate in voluntary group participation, make more voluntary contributions to the group, play alone less frequently. They also exhibit unfavorable behavior categories, too.
Fuller & Baune (1951) (12)	11 boys & 11 girls in 2nd and then 3rd grades. Mean I.Q. 133, 7-8 years. Has 5 times as many accidents as average child.	Oral by individual.	Choose 2 to have lunch with, go to movies with, work in class with.	First aid referrals. H.O.W. Behavior rating scales. Fuller Affectivity Interview Blank.	Less popular children receive more injuries than more popular & larger proportion of social injuries, i.e., those involving other children. Less popular score lower on the Fuller Affectivity and higher on the H-O-W Behavior scale. More popular have fewer problem tendencies than social isolates.
Polansky, Lippitt & Redl	104 children in summer camps, 1 of	Interview, sorting of subjects' pictures into classi-	Near sociometric choices, prestige choices. Near or	Direct observation of amount of time spent together, of	Popularity not an index of group status. Little correspondence found between

TABLE 1 (*continued*)

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
(1950) (28)	boys, 1 of girls, 10-14 years.	fied boxes. Test given twice, end of 1st and 3rd weeks.	liking choices made for own group & the whole camp.	influence. Rankings by counsellors—every 4 days.	whom a child says he likes to be with and whom he is with.
Byrd (1951) (5)	2 7th grade pupils.	Children free to choose as many others for play as they wished. Choices made privately.	Situation I—children to choose persons they wished for a play. Situation III—1 week after play was given, repeat as in 1.	Situation II—4 days after I, children did actually choose persons for plays and presented them.	Rho's on degree of constancy from one situation to another Situation I & II .76±.09 Situation II & II .80±.08 Situation I & III .89±.04
Greenblatt (1953-54) (15)	27th grade classes.	Test given 1949 and 1950.	Sociometric test unspecified.	Mental health tests; participation at 3 school dances. 2 observers.	Girls with high mental health and high sociometric scores are found less often in rôle of non-participant at dances than girls of low mental health and sociometric scores. Findings for boys inconclusive.
Bock (1952) (3)	16 in 9th grade physical science class, 6 girls 10 boys.	Students worked on a problem in pairs. Observer noted the amount of interaction. Class could group freely.	Choose 3 in the class with whom you prefer to work.	Amount of interaction, timed by an observer each minute.	Much interaction between mutual choices but not all. Also secondary interaction. Primary or extensive interaction between unreciprocated choices, to some extent.

TABLE 1 (*continued*)

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
Bates (1952) (2)	6 groups of 8 members, college students in a Social Disorganization class. Largely unacquainted. 2 sessions a week for 8 weeks.	Test given at end of 3rd, 10th & 15th sessions & at end of experiment.	List the S's in order as to who contributes most to carrying out task. Pick 3 who most lived up to each of 9 norms selected from group questionnaires & tape recordings, also 3 who least lived up to norms.	Observers recorded amount and content of interaction.	Correlation between 3rd sociometric ranking: and communications sent .85 and communications received .91 and total communication .92 Correlations of sociometric rankings & those named as leaders .83
Schachter (1951) (33)	4 types of clubs, 8 of each type, 5-7 members. 3 Ss in each group acted as deviate, model, and slider. Clubs organized by experimenter.	After session of the clubs in which instructed Ss acted their part, ranking and nominating to committees took place.	Assignment of group members to committees which were in order of desirability. Executive, Steering, and Correspondence. Also members ranked each other as to desirability as a club member.	Number and time of communications addressed to instructed Ss during club sessions. Committees elected by the members.	Deviate strongly rejected in sociometric choices. With cohesiveness constant, rejection greater in relevant than irrelevant groups. With relevance constant, rejection greater in cohesive groups. Communications to deviate increase, except by strong rejectors; to model are few and constant, to slider decrease during the meeting.

dustrial studies. Military studies are presented in the second. The third includes studies in educational situations and summer camps.

Several aspects of each study are reported in the summaries presented in Table 1. The first column indicates the name of the investigator and the year the study was reported. The next two divisions provide descriptions of subjects used and the conditions of data collection. The fourth column describes the basis for the sociometric choice. The fifth category contains information about the performance measure employed. The final column presents the obtained results. A brief statement of conclusions drawn by the investigator also is presented in the last column.

Studies within Industry

Prediction of performance within the industrial situation from sociometric responses is presented in the first section of Table 1. The studies are consistent in reporting that positive sociometric criteria choices received by individuals are correlated with effectiveness in performance on external criterion measures.

The number of choices received has been studied from two points of view. One concerns the validity of choices for work partners when the distributions of choices received is directly correlated with the performance criterion. Studies such as those by Springer (35) and Van Zelst (37) are examples of investigations conducted in this way. Both report that ratings by coworkers for desirability as work partners and other job related activities correlate with positive attitudes toward work and with quality and quantity of performance on the job. Consistent with these results is the reported finding that accident proneness is inversely correlated with choices received (34). The latter finding is confirmed in two investigations in non-industrial situations (12, 42).

Choices received have been employed for combining partners into work units whose performance efficiency is then evaluated. Van Zelst (38, 39) has shown that after regrouping construction workers on the basis of a sociometric criterion, construction costs for work done by these workers decreased as compared with a control group in which the pairings were made on other than sociometric considerations. Studies (31, 36) relating production to sociometric distributions that have been conducted in the industrial situation also are reported in Table 2.

Military Studies

Military studies are summarized in three ways in the second section of Table 1. The first group is concerned with the degree of correspondence between sociometric response distributions and superiors' ratings on variables such as leader behavior (18), military bearing (22), and officer potential (19, 29). Significant relationships between sociometric choices by peers and performance ratings given by platoon (19), squadron and wing officers (18) and other staff raters (29) are reported.

The second set relates sociometric responses to criterion performance measures used in evaluating Officer Candidate School students. Significant and positive relationships are reported between peer nominations given in training and the Officer Candidate School (40), in-training proficiency tests (7, 14), and flight checks (7). Other criteria such as flight accidents (42) and frequency of sick bay attendance and number of disciplinary offenses (11) have been found to be negatively related with number of choices received when the sociometric criterion measures a positive aspect of behavior. The relationship reported here is consistent with the finding relating sociometric choices to accident proneness in industry, as reported earlier in this paper (34).

A third set of military studies relates sociometric response distributions to a variety of performance measures other than those described above. Significant relationships between peer nominations during training, including Officer Candidate School training programs, and later performance, as determined by measures of combat effectiveness as reported (7, 20, 41). These studies suggest that measurements involving sociometric choices constitute useful indicators of future military proficiency. Number of choices received is associated positively with effectiveness in military activities. Choices are inversely associated with criterion variables that measure negative factors in military performance.

Studies in the Educational Situation

The final section in Table 1 summarizes investigations relating sociometric choices to performance in the educational situation. Training situations include the formal school system and other programs like summer camps and nursery schools.

The first studies in Section 3 are concerned with leadership behavior. Sociometric choices received on leadership items are related to observers' ratings of leadership behavior in group discussion and in other types of

TABLE 2

EVALUATION OF THE RELATIONSHIP BETWEEN GROUP SOCIOMETRIC SCORES AND A VARIETY OF GROUP PERFORMANCE MEASURES

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
Strupp & Hausman (1953) (36)	99 aircraft maintenance mechanics, 9 crews & supervisors.	Part of a larger testing program.	Nomination or rejection of fellows on 12 choice criteria.	Supervisors rated job performance. 3 management supervisors ranked crews on productivity.	Sociometric measures indicating attractiveness of crew and crew chief to members of crew correlated highly with productivity criterion.
Rock & Hay (1953) (31)	7 men selected from 40 applying for positions, on a job evaluation committee.	Two leaders chosen from others as being qualified to be good leaders.	Choose partner for various social & work purposes.	How committee works under leadership of each.	Committee working under predicted leaders evaluated twice as many jobs. Members participated more when acting as leaders. When a member was leader, his leadership was non-directive & group took over.
Roby (1952) (30)	90 11-man bomber crews.	Bomber crews in training at Randolph.	Sociometric rating.	Various performance measures to indicate effectiveness of sub-group performance.	High degree of personal liking is associated with superior performance of the crew as a whole.
Ziller (1953) (43)	94 10- & 11-man bomber crews in training.	Test given before problem solving; confidence ques-	Sociometric questionnaire on 3 measures of cohesiveness & crew integration;	Success in problem solving involving 5 possible approaches & 5	Crew attraction positively related to group problem-solving flexibility.

TABLE 2 (*continued*)

TABLE 2 (*continued*)

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
		tionnaire given after introduction to problem but before solving it.	questionnaire on group confidence.	degrees of flexibility. California F-Scale & "Social Rigidity or Conformity Scale" after problem solving.	
Fiedler (1954) (8)	53 B-29 crews.	Sociometric rating. Assumed Similarity Score by comparing predictions command or makes for his most & his least preferred coworker on sample personality test item.		Radar Bomb Scores.	Significant relation between AC's Assumed Similarity Score & Radar Bomb Scores only in crews having a certain sociometric structure, i.e., where AC and keymen mutually chose each other.
Greer, Galanter & Nordlie (1954) (16)	63 infantry squads of 9 men. Had worked together from 1 month to 2 years	Top and bottom 13 squads interviewed. During the interview, neither the interviewer nor the inter-	List squad according to how well you like them. Make a list of order in which everyone, including self, is liked by the group as a whole. Thus a de-	Effectiveness in solving a field problem set up & observed by superiors. 4 missions in the problem.	Effective squads significantly better at perceiving preference hierarchy than less effective ones.

TABLE 2 (*continued*)

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
		viewee knew from what category squad the member came.	rived preference hierarchy was made up from sociometric rating and each man's perception of it derived as a discrepency score.		
Fiedler (1954) (10)	25 Army tank crews, 5 men in crews.		Sociometric ratings Assumed Similarity Score of commander. (See Fiedler (8)).	Unspecified objective criteria.	Where commander and keymen mutually chose each other the commanders ASo correlated significantly with objective criteria as in the bomber crews.
Haythorn (1953) (19)	16 NROTC sophomores. Working in groups of 4, rotating so each worked with another only once.	At end of each of 5 sessions each ranked the group & members in it as to leadership desirability. Afterwards Cattell 16 Personality Factor Questionnaire given.	Select best & poorest leaders in the group.	Rating of workers & observers on group's success, morale, cooperation, productivity, cohesion, talkativeness, competitiveness, job-completion, motivation, friendliness, social interaction. While	Significant relationship between degree subjects were chosen by co-workers & extent group was rated high in morale, coöperation, cohesiveness, motivation, & interest in job-completion by co-workers.

TABLE 2 (*continued*)

Investigator	Subjects	Test Conditions	Sociometric Criteria	Performance Criteria	Results and Conclusions
				working on reasoning, mechanical assembly, discussion tasks.	
Fiedler (1954) (9)	22 3- and 4-man surveying teams.		60-statement questionnaire, 7-point scale, predicted how most & least cooperative worker would fill in questionnaire & other measures.	Ratings of survey teams by instructors.	Evidence suggests that the more effective surveying teams tend to be less congenial than relatively ineffective teams.
Fiedler, Hartmann & Rudin (1952) (10)	Members of 14 high school basketball teams.	Tested at beginning of season & a 2nd group of 7 good & 5 poor teams were tested at end of season.	With whom can you play best & least well? And other measures.	Proportion of games won used as criterion of team's effectiveness.	More effective basketball teams confer status on task-centered persons; less effective teams confer status on warm, relationship oriented individuals.

group tasks. Correlations between observers' evaluations and peer nominations of leaders, for example, range from .25 to .60 for group discussion activities (1, 13). On intellectual, clerical and mechanical work tasks, correlations between leadership ratings and both superior's ratings and an index of school activities range from .12 to .66, with intellectual and clerical tasks yielding higher correlations than are reported for leadership and performance in mechanical tasks (6).

Attributed influence, measured by near-sociometric scales, has been correlated with observers' ratings of successful influence attempts (26, 27, 32). Studies of children in camp situations report correlations ranging from .49 to .71 between status as determined by sociometric choice and observed success in influencing others. Popular children are more frequently imitated than are children who are less popular (26, 27).

The volume of sociometric responses received has been studied in connection with observers' ratings of behavioral characteristics exhibited under informal conditions involving play. Positive correlations between friendship choice and characteristics such as coöperation, obedience, generosity, and conformity have been demonstrated (4, 23, 27). As in other settings, a positive sociometric choice also has been found to be inversely related with accident proneness in the school situation (12).

Volume of interaction also has been investigated as a criterion variable on the assumption that the frequency of contact between people constitute a positive dimension of social conduct. Four different studies report positive correlations between sociometric choices received and frequency of interaction (2, 3, 5, 15). Office girls have also been found to spend more time in interaction with those who receive a high number of friendship nominations (17). One study has failed to confirm this relationship (28), and another study, using communication as the index of interaction, has shown that under certain conditions frequency of interaction may be inversely correlated with choices for association (33).

Relationship between Group Sociometric Scores and Group Performance

The validity of sociometric responses can be assessed from a second point of view. Rather than validating the distribution of choices received by individuals against a criterion measure, the distribution of choices, received can be evaluated on a group or "team basis." The performance measures used for this purpose are criteria that discriminate between groups rather than individuals. Studies based on differences between groups rather than individuals are summarized in Table 2.

The attractiveness of a group to its members has been related to measures of the effectiveness of group performance. In industrial studies, productivity has been employed as a measure of group efficiency. Crew effectiveness is one basis for judging the adequacy of military performance. The studies reported show that the more attractive a group to its members the greater its efficiency. Personal liking within the crew (30, 43) and group attractiveness in the industrial situation (36) are associated with superior performance by the work team. Mutuality of choice within a crew also is related to its effectiveness (8). Results not consistent with this generalization have been presented in an investigation showing that less effective basketball and surveying teams are more congenial and have warmer interpersonal relations than do more effective ones.

The relationship between the rôle structure of a group and its efficiency is dealt with in one study in Table 2. When leaders chosen by sociometric procedures act as leaders, their groups are more efficient than when members, not seen as leaders, are assigned that rôle (31). This finding is similar to one reported earlier showing a positive relationship between sociometric choice for leaders and observers' ratings of effectiveness in leadership behavior (1, 13).

Measures of morale, coöperation, and cohesiveness have been employed to describe group characteristics. A relationship between ratings of coworkers for leadership desirability within the group and positive ratings on group variables such as morale has been reported (19). The conclusion is consistent with the findings reported above showing that work groups in which the teams are paired on a sociometric basis are more productive than are groups in which workers are paired by other than sociometric procedure (38, 39).

Summary

Studies relating sociometric response distributions to variables classifiable as performance measures have been summarized in the present paper. While the reports included are of uneven quality, the consistency in the findings that have been reported by different investigators can be taken as evidence that the sociometric choice provides a valuable method of measuring personal and group characteristics. The sociometric distribution being validated and the criterion employed to assess performance have been based on either individual or group measures.

The validity of sociometric choices has been determined for both immediate and distant criteria. Number of choices received on positive soci-

ometric criteria has been found to predict such performance criteria as productivity, combat effectiveness, training ability, and leadership. An inverse relation also has been confirmed in a number of studies that show number of choices received to be negatively correlated with aspects of behavior considered to be undesirable, including such variables as accident-proneness, sick bay attendance and frequency of disciplinary offenses. The finding for accident-proneness has been observed in industrial, military, and educational settings and for both children and adults. The results thus far reported indicate that sociometric choices merit more intensive analysis as a basis for predicting a variety of performance criteria than they have yet received.

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A STUDY OF SOME FACTORS IN FRIENDSHIP FORMATION[1]

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I. INTRODUCTION AND PROBLEM

In a previous paper (Thorpe, 1955)—a study of some of the factors involved in sociometric status—a sociometric test was administered to thirty-four complete school classes. The information so obtained lent itself admirably to a study of some of the factors involved in friendship formation. The factors investigated in this connection were neuroticism, intelligence, age, and popularity, the whole of the data for these variables also having been obtained from the first study.

II. METHOD

The sociometric structures as revealed by the sociometric tests were examined, and from each class equal numbers of pairs of friends, partial friends, and non friends were selected. Friends were defined as those individuals who, in the sociometric test, gave each other first choice on each of the three "positive" sociometric criteria. Partial friends gave each other either second or third choices on each of the criteria or a combination of these. Non friends named each other on the "liked least of all" criterion. In this last case the fewness of these pairs necessitated the inclusion of pairs of individuals, one of whom liked the other least of all, while the other gave him no mention at all. Individuals were not allowed to appear more than once as members of a pair in any one category.[2] These groups of pairs of individuals were then built up for the whole sample of classes. The groups were then segregated according to sex, giving a group of friends, partial friends, and non friends for boys, and the same for girls. The former contained thirty-three pairs of each, the latter forty-five pairs.

Taking each sex group separately, the differences between the pairs on the variables, neuroticism, intelligence, age, and popularity, were then examined statistically for significant differences between the groups of friends, partial friends, and non friends, and between the schools by the analysis of variance technique.

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[1] Based on the writer's Ph.D. Thesis (Thorpe, 1953).

[2] In each class there were usually one or two individuals who were disliked by many members of their group. The above rule was enforced for this reason.

The main points about this method are as follows:

(i) There is no capitalization on the personality characteristics of any one individual in the class. (See footnote 2).

(ii) The selection of equal numbers of pairs of friends, partial friends, and non friends from each class ensures that the groups are comparable on other criteria.

(iii) The selection of these main groups of pairs permits the assessment of the effects on friendship formation of the variables under consideration to a much finer degree.

(iv) The analysis of variance technique allows a test of the hypothesis that within each sex grouping, school differences need not be taken into account when the factors in friendship formation are evaluated.

III. Results

The results are presented in tables 1-8 below:

TABLE 1

Chronological Age—Girls

	Friends (45 pairs)	Partial Friends (45 pairs)	Non-Friends (45 pairs)
Mean difference	3.80	4.222	5.00
	Analysis of Variance		
	d. f.	Sums of Squares	Variance
Groups	2	48.014	24.007
Schools	16	548.407	
G x S	32	468.264	14.633
Within Classes	84	935.085	11.131
Total	134	1999.77	

Significance of Difference between Means:

F = 1.641 NS

G x S Variance/Within Class Variance F = 1.315 NS

TABLE 2

CHRONOLOGICAL AGE—BOYS

	Friends (33 pairs)	Partial Friends (33 pairs)	Non-Friends (33 pairs)
Mean difference	4.151	4.515	5.242
	Analysis of Variance		
	d. f.	Sums of Squares	Variance
Groups	2	20.365	10.182
Schools	15	289.574	
G x S	30	496.471	16.549
Within Classes	51	755.500	14.814
Total	98	1561.910	

Significance of Difference between Means:

F = 615 NS

G x S Variance/Within Class Variance F = 1.117 NS

TABLE 3

NEUROTICISM—GIRLS

	Friends (45 pairs)	Partial Friends (45 pairs)	Non-Friends (45 pairs)
Mean difference	6.356	4.800	5.822
	Analysis of Variance		
	d. f.	Sums of Squares	Variance
Groups	2	56.237	28.118
Schools	16	286.763	
G x S	32	786.823	24.588
Within Class	84	1555.503	18.517
Total	134	2685.326	

Significance of Difference between Means:

F = 1.143 NS

G x S Variance/Within Class Variance F = 1.328 NS

TABLE 4

NEUROTICISM—BOYS

	Friends (33 pairs)	Partial Friends (33 pairs)	Non-Friends (33 pairs)
Mean Difference	6.606	7.636	8.000
	Analysis of Variance		
	d. f.	Sums of Squares	Variance
Groups	2	54.505	17.252
Schools	15	427.520	
G x S	30	780.496	26.017
Within Class	51	1173.500	25.402
Total	98	2436.021	

Significance of Difference between Means:

F = .663 NS

G x S Variance/Within Class Variance F = 1.112 NS

TABLE 5

POPULARITY—GIRLS

	Friends (45 pairs)	Partial Friends (45 pairs)	Non-Friends (45 pairs)
Mean Difference	6.133	5.800	6.355
	Analysis of Variance		
	d. f.	Sums of Squares	Variance
Groups	2	7.036	3.518
Schools	16	471.662	
G x S	32	1361.050	43.532
Within Class	84	2156.000	25.680
Total	134	3975.748	

Significance of Difference between Means:

F = .082 NS

G x S Variance/Within Class Variance F = 1.656 (significant at 5 % level)

TABLE 6

POPULARITY—BOYS

	Friends (34 pairs)	Partial Friends (34 pairs)	Non-Friends (34 pairs)
Mean Difference	5.588	5.588	8.324
	Analysis of Variance		
	d. f.	Sums of Squares	Variance
Groups	2	169.588	84.794
Schools	15	426.1	
G x S	30	535.612	17.854
Within Class	54	1618.2	29.890
Total	101	2749.500	

Significance of Difference between Means:

F = 2.837 NS (Note: Within Class Variance used as error term as G x S Variance < Within Class Variance)

G x S Variance/Within Class Variance F = .597 NS

TABLE 7

INTELLIGENCE—GIRLS

	Friends (45 pairs)	Partial Friends (45 pairs)	Non-Friends (45 pairs)
Mean Difference	5.444	5.311	5.200
	Analysis of Variance		
	d. f.	Sums of Squares	Variance
Groups	2	1.348	.674
Schools	16	393.523	
G x S	32	633.933	19.810
Within Class	84	1519.500	18.089
Total	134	2548.304	

Significance of Difference between Means:

F = .034 NS

G x S Variance/Within Class Variance F = 1.095 NS

TABLE 8

INTELLIGENCE—BOYS

	Friends (33 pairs)	Partial Friends (33 pairs)	Non-Friends (33 pairs)
Mean Difference	3.697	4.727	3.727
	Analysis of Variance		
	d. f.	Sums of Squares	Variance
Groups	2	22.687	11.343
Schools	15	194.160	
G x S	30	421.337	14.044
Within Class	51	569.564	11.168
Total	98	1207.748	

Significance of Difference between Means:

F = .808

G x S Variance/Within Class Variance F = 1.257 NS

It will be seen from these tables that within the sexes in only one case do school differences have to be taken into account. This is indicated by the fact that the Groups by School (interaction) variance is never significantly larger than the within class variance except in table 5. It must here be noted that the number of pairs of friends, partial friends, and non-friends selected from each school was necessarily small. In the case of both boys and girls the number of pairs of each per school varied from one to four. This, of course, would tend to make less rigorous the analysis of variance, and any real differences between the schools may be marked by the selection of only a few members from each.

The effects of chronological age on friendship formation in the case of both boys and girls is not statistically significant, but an examination of the means of the age differences between friends, partial friends, and non-friends does indicate a slight trend—friends are more similar in age than partial friends, and partial friends are more similar than non-friends. If this trend is to be at all significant, then an increase in the number of pairs of each would be expected to show up this significance. However, the between group variance, when the boys and girls groups were combined, was still not significantly larger than the interaction variance ($.10 > p > .05$).

Friendship formation would seem not to be influenced by the relative

neuroticism of the individuals, a neurotic child being as likely to have as his friend an equally neurotic child, or one who was relatively stable. This applied to both boys and girls.

Similarly with intelligence. For neither the boys nor the girls group did intelligence have any bearing on friendship formation.

The effect of popularity on friendship formation would appear to be different for boys than for girls. For boys there was a tendency for the differences in popularity scores between the non-friends to be larger than the same differences between either the friends or the partial friends. This characteristic of the group of non-friends approaches the 5% significance level. For girls, there was no relationship between popularity on the one hand, and friendship formation on the other.

IV. Discussion

The first point worthy of note is that with the exception of the similarity of girl-girl friends with respect to popularity, there are no apparent sex differences. In the case of chronological age, the tendency for friends to be more alike than partial friends, and partial friends more alike than non-friends is discernible both for boy-boy and girl-girl pairs. In respect of neuroticism and intelligence, these factors would again appear to be unrelated to the sex of the pairs. In neither (sex) case does either of these factors show any relationship to friendship formation. The one exception, noted above, to this general tendency is difficult to account for. At this stage of research in the present field, corroboratory evidence would be required before the exception could be taken at all seriously.

As in the case of factors related to popularity or sociometric status (Thorpe, 1954a), so in the case of friendship formation, one might justifiably expect cultural differences to be in operation. Evidence on the effects of these cultural differences can best be gleaned by a comparison of past with present results, but the majority of studies do not lend themselves easily to a direct comparison.[3] Two studies which do, are those of Bonney (1946) and Potashin (1946). A comparison of the results of these two studies with the present results does not reveal any startling discrepancies. This tends to rule out the suggestion of the effect of cultural differences on the relationships studied.

[3] See Thorpe (1953) or 1955 to appear.

V. Summary

(i) Groups of pairs of friends, partial friends, and non-friends were built up and the mean differences between the pairs for each group in respect of intelligence, neuroticism, age, and popularity were compared.

(ii) In the main, whether the pairs were male-male or female-female made no difference to the results obtained.

(iii) Each of the above variables was found to be unrelated to friendship formation with the possible exception of age, friends tending to be more alike in age than non-friends. This trend was not significant statistically, though it applied equally well to male and to female pairs.

(iv) These results indicated, so far as the results of previous investigators would allow, that cultural differences had no effect on the relationships studied.

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A SOCIOMETRIST'S REMARKS ON THE SOVIET PURGES

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A. THE PROBLEM

It will be the contention of this discussion that the sociometric variable(s) may be found highly predictive of purges occurring in the decision-making groups within the Soviet Union.

This paper will be aimed at elaborating upon theoretical propositions which, if verified, may increase predictivity of forthcoming purges.

B. INTRODUCTION

The *sociometric variable* as used herein is seen as the socioemotional product of a cluster of more specific likes and dislikes. The *sociometric variable,* of course, in its more specific designation has been called the *tele*-factor (by Moreno, 1). The emotional involvements of individuals become patterned in the process of manifold interactions so that one generalized attitude tends to evolve of each actor with respect to all the coactors in the group (2). This attitude is expressible as a rather narrow range somewhere along the continuum of likes and dislikes (3).

As far as predictivity is concerned, we have expressed ourselves rather carefully: we argued that the variable (t-factor) *may* be found predictive (and, by implication, may not). At this time we shall not elaborate upon possible empirical evidence in support of this theory, nor can we provide anything resembling a probabilistic proof for our hypotheses.

By "predictive" we certainly do not mean "explanatory". Our approach shall not deal with real, or alleged, *reasons* and *motives* for past purges but rather, with ways whereby possibly future purges can be estimated.

Beck and Godin (4), Brzezynski (5) and some others have offered explanatory theories; Leites and Bernaut (6) have come forth with a rather fascinating analysis of the Big Purges (1936-1938). An attempt has been made by Schueller (7) to look for socio-cultural variables in Soviet Politburo members that might be related with the length of their retention in office. With these approaches we are in no quarrel but as Timasheff (8) had correctly pointed out in his review of Leites (9), while fascinating, the Leites' analysis does not promise predictivity. In his little volume, Reshetar (10) has merely posed the problem of prediction.

Our own work is, however, closely connected with the original observation of Moreno (11). Says he:

> "The network theory is able to interpret political phenomena difficult to understand otherwise. One illustration is the purges attributed to Stalin. Why were extensive mass murders committed when relatively few men had actually been found guilty of treason? It would seem unnecessary to punish more than a few, but the cold politician, Stalin, knew that, besides the few men who had been direct associates of Trotsky, there were literally thousands more, potentially equally dangerous, who would be just as threatening to his regime. He knew that, to each of the, say, twelve guilty men, a number of sympathizers must be linked, and to each of these sympathizers, in turn, others were linked, and to this larger circle many others were interlinked, either directly or indirectly, who might become infected with the same political ideas. . . ."

The interpretation of the Soviet purges—as here intended—is then to a large extent merely an attempt to extend sociometric theory and findings (and methods) into the area of political relations. Instead of aiming at an exhaustive analysis, we shall simplify our problem by defining our assumptions, and then, by dealing with but several factors at play. But in doing so, we are choosing our assumptions, and the conclusions drawn from them, so as to maximize the chances of predicting.

Our variables then need not be related to purging in a simple cause-effect fashion. But they should meet the criterion of observability, at least. They may be seen as indicators correlated with the predicted behavior.

C. Assumptions

We will accept two working assumptions. These will be taken as points of departure for our theorizing precisely because by employing these assumptions rather than others, we believe our task of predicting facilitated.

I. We will assume that the Bolshevik leaders do accept, and generally behave, in compatibility with, dialectical materialism. This need not mean that all tenets are acceptable necessarily, but that the major propositions of Marxism-Leninism-Stalinism are entirely, at the present time, beyond the realm of doubt.

Instead of defining dialectical materialism, we shall take the official Soviet positions at their face value, positions best stated in their *History of the Communist Party of the Soviet Union* (*Bolsheviks*), Short Course (12).

II. We shall next assume that decisions are being reached in relatively small groups, although this does not preclude the workings of innumerable pressures both internal and external to the decision-making group.

Implicit in this statement is the assumption that the Soviet small groups do not greatly differ, in major group processes, from small groups studied in the United States and throughout the empirically accessible world.

Studies of the (Great Russian) national character, such as the rather recent accounts by Mead (13) and Dicks (14) indicate undoubtedly that many traits of the Russian are quite in correspondence with the tenets of the doctrine. Such studies that deal with the organization of the society, or the Party, say volumes of a Selznick (15) or Fainsod (16) similarly point out rather clearly how the organization is best explainable in terms of the dogma. Yet, somewhat uncertain of their own conclusions, or the ramifications thereof, most Western experts have not reconciled themselves to the possibility that—since the Soviet society can best be portrayed through the looking glass of the doctrine—the dogma itself may be considered as firmly rooted in the thinking of the Bolsheviks.

The curious paradox may often be observed: while the analyst finds that the society, the behavior of the members in it, their general personality patterning, may be usefully explained in terms of Marxist theories, he wishes at the same time to ascertain that the dogma is used "cynically" by the leaders—chiefly for propaganda purposes.

We shall do nothing of the sort whatever the valid analysis may be. We shall argue that the Soviets do believe in what they are preaching, that is, at least the group(s) in which we are particularly interested.

Our assumption of the relevance of small group research to the problem at hand means but a few simple things. For one, we shall argue that as a group interacts over time, it will tend to break down into smaller groupings, subgroups and cliques which, as time elapses, become patterned (17). We will also argue that the institutionalized role-structure of the group has as its depth-dimension (18) a particular sociometric structure, or even depending on the activity type, several such sociometric structures.

The sociometric configurations prevailing in the group at a time will tend to modify, and be modified, in turn by, the formalized group processes. No decision is likely to be reached without intensive emotional interplay of those who make the decision. How they speak to each other, what words they use, what arguments they present, will evidently not be unrelated to the feelings the members have for each other.

It will be relatively unimportant from our viewpoint to try to reason out the roots from which particular emotional feeling-states arise. They are, in part, situational only; in still another respect they are generalized products of an individual's whole field of experience and anticipation.

D. Decision-Making

In acting upon issues, the decision-makers "solve problems". Each such problem arises under specific constellations of historical forces (i.e. in terms of the Marxist dogma). It can be solved by the correct application of the analytical tool provided by dialectics. Furthermore, each problem—at any given time—can be solved correctly in but one way.

The world appears, to the Bolsheviks, basically in black and white only; in a clear Aristotelian manner, a solution is either correct or incorrect. And only one solution is correct and all other possible solutions *ipso facto* must be incorrect.

It is quite a different matter to believe, as the Bolsheviks do, that problems are "posed by history" and that they can be correctly solved, and to apply this generalized formula to actual decision-making. In specific terms, a criterion is needed whereby one can proclaim one alternative course of action to be the "correct solution" to a problem.

Since Marx, Lenin and Stalin "correctly predicted" that mankind's history unfolds according to clearcut dialectical laws and that it evolves toward Communism, and since the Party is precisely the organization, mankind's vanguard, that is destined to mold the future of humanity, the action which must be taken is that one which, at any given time, is seen to aid the Party most. The future belongs to the "Party of the proletariate"—hence, when the Party is strengthened history moves along the desirable paths.

The seemingly simple rule is then adopted: the correct solution to a problem is that course of action which maximizes the strength of the Party at that time and under given circumstances. But how can such an operational rule be translated into forms of behavior? First, alternatives must be considered, weighted for their relative merits (for the Party). Of these alternatives but one is the correct one. All others would relatively weaken the Party (for example, by not strengthening it as much as it could have been had a different step been taken)—and all others are consequently "objectively counterrevolutionary" alternatives.

The behavior of individuals in the decision-making group is likely to involve "taking sides" when alternatives are being considered. Different alignments will rise around alternative possible solutions.

Somehow a decision is reached. One of the alternatives is seen as the one which enhances the Party's power most—and that is the "correct solution" to the problem. Whether this decision is finally reached by a majority

vote, or by the acceptance of the position taken by the leader* on the part of other members, would be largely irrelevant for our purposes. However, we would argue that the leader (Lenin, Stalin, Malenkov, Bulganin or Khruschev)—if he wishes to retain his position of leadership—must establish and upkeep a record of standing on the right side of issues.

Having come to a decision, all alternatives previously considered become counterrevolutionary. Their supporters become, by definition, deviants. They reestablish themselves in the group by self-criticism; they admit their error and in an orgy of self-condemnation show how their own suggestions (or suggestions they supported) would have in effect ruined the Party.

Let our discussion now be summarized:

(1) A problem is perceived—and anything involving any decision is defined a problem.
(2) Alternative ways of solving the problem are offered either by experts or by the members of the decision-making group.
(3) The alternatives are studied, discussed, and argued about. These are the stages of "constructive criticism".
(4) The supporters of alternative positions argue that only by adopting the course of action they advocate will the Party be strengthened most ("correct solution").
(5) A decision is reached which establishes one course of action as the only correct one at the time.
(6) Supporters of the adopted alternative become the "in-group".
(7) Whereas supporters of other solutions become, temporarily, deviants.
(8) The mistaken individuals tend to restructure the group relations and reintegrate themselves by recognizing their "error" in the face of the "ingroup" members.

E. The Aftermath of Decisions

We will now hypothesize that as issue after issue are being dealt with, the individual members of the Presidium will find themselves rather frequently aligned with the same other individuals. The ingroup and the subgroups will not be stable configurations, however, they will tend to become

* It is rather interesting to note that Isaac Deutscher (19) in his penetrating analysis of the Stalinist Politburo underscores the fact that Stalin would not speak *at first* during the meetings, and once he spoke, an issue was practically settled. This exactly corresponds to our reasoning: the leader must not commit himself too soon to any alternative which might become a "deviant" one.

more stable as time goes by. The leader, we believe, will be always in the ingroup—always in the group which supports the "correct solution".

Members of the subgroups reintegrate into the larger group by self-condemnations. We wish to assert that it can be usefully hypothesized that the manner in which these self-criticisms are interpreted by the members of the ingroup, and especially by the leader (and the relatively stable clique that may evolve around him), will be the determinant of the social worth of the individual decision-maker. Obviously, self-criticism alone does not reestablish an individual's position: it does so only coupled with acceptance by others of the self-criticism.

Let a few types of situations be considered.

I. *Uncommitted Individuals.*

From issue to issue, some individuals may attempt to avoid taking a clearcut stand. In terms of Bolshevik ethics (and the role-expectations in the group), however, each individual must guard himself not to be perceived as a person who avoids issues. The *"vigilant Bolshevik"* must be able to take full responsibility; and he must "contribute" to the group to last in it. A Bolshevik who would avoid taking stands would likely be defined as "incompetent".*

II. *The Unyielding Individuals.*

Occasionally, various individuals may not wish to submit themselves to the ingroup. They adhere to their views even though the correct solution had been reached. In the Bolshevik jargon, such individuals "break the unity of the Party".**

(a) if such individuals keep their (mistaken) views to themselves only and within the circle of the decision-making group and do not try to keep on convincing other Comrades that their view was the correct one, they need not be punished in any way.

(b) if such individuals keep arguing for their position even though a different one had been accepted, they are likely to be either removed or actually punished.

* Announcing the demotions of 15 Presidium members appointed in 1952 to expand the membership to its largest size in history (25), Malenkov in March 1953 stated that some of the Comrades "lacked experience", were "not quite competent" and that the workings of the Presidium have been hampered thereby.

** In the controversy of the late 20's between Stalin and Trotzky, Stalin and Zinoviev and Kamenev, Stalin's opponents never yielded to the "ingroup" and did attempt to gain supporters for their views. Stalin's speeches of the era are filled with arguments pertaining precisely to the issue of "Party unity" and the meaning of it.

(c) they will be removed only if their "Bolshevik sincerity" is otherwise beyond any doubt.

(d) they will be purged (and punished) if they are capable of gaining supporters for their views—for then the Party "unity" is "objectively" undermined.

III. *The Self-Critical Individuals.*

The ingroup members may interpret both the "mistaken stand" as well as the subsequent self-criticism as either sincere and honest, or else, insincere and dishonest.

(a) individuals who err and subsequently self-criticize but are believed sincere will at worst be removed for "incompetence" or "lack of Bolshevik vision".*

(b) individuals who, under the same conditions are believed insincere will be purged for treason, espionage, opportunism.**

F. The Sociometric Variable

How will an individual's behavior be interpreted as sincere or insincere? Obviously, in no objective manner can such an interpretation be made—unless there is clear evidence of treason. The members of the ingroup are consequently likely to be deciding about sincerity of errors and self-criticisms in terms of their emotional involvements with error individuals.

It is not too exaggerated to say that the ingroup member will believe his friends*** to have committed errors honestly; and that they will believe that individuals whom they do not like erred for some "hidden" reason.

The Bolshevik leaders become predisposed to liking some of their Comrades, while disliking others. Individuals that are disliked are suspicious. Nor can they ever (even should they be aware of such suspicions) convince their opponents that they are honest Bolsheviks (and do not make errors for opportunistic, treacherous reasons). Their attempts at explaining their behavior and removing such suspicions are merely likely to aggravate the suspicions. We may even speak of a feedback of mistrust in as much as mistrust once formed tends to grow regardless (almost) of the subsequent behavior of persons mutually mistrustfull and mistrusting.

* The demotion of Malenkov seems a case of this type. Perhaps the relation of Malenkov to Kruschev (through Malenkov's sister) has been of utmost importance in "saving" Malenkov.

** The case of Beria may be looked upon as an example.

*** We mean "friends" in terms of specific sociometric activity criteria.

Most individual members in the decision-making group are likely to be erring at one time or another. Most are also likely to be self-condemning at one time or another. How will the leading clique look at their errors depends to a considerable extent upon the emotional undertones of the group process, upon the sociometric variable(s). The variables(s) should then be useful predictor(s) of the behavior of the leading clique toward other members of the group.

G. Generalized Predictivity

If we could determine the sociogram of the Presidium, for example, and say who belongs into which subgroup, faction or clique, we would come out with several rather interesting suggestions:

(1) Individuals disliked by the leading subgroup will likely be purged sooner or later:

(a) over a period of time, they will commit errors.
(b) their confessions of lack of vision will be suspected for sincerity.
(c) errors by many other individuals on the same issue may have the effect of an "intervening variable".
(d) relative indispensability of such individuals (due to their skills, or for want of persons ready to replace them) will also have a delaying effect.
(e) if such individuals err over a set of issues in conjunction with some other individuals, factionalism will be suspected and this will operate as an "aggravating" variable.
(f) relative importance of the issues will be of some significance.

(2) Individuals liked by the leading subgroup, even with a sizable record of errors, will not likely be punished but merely removed from positions of responsibility (and "given a chance").

(a) the relative margin of tolerance will be wider—for many errors will be "explained away".
(b) and even with numerous errors, the problem is seen as one of incompetence rather than treason.

(3) Removal of members from the leading subgroup will occur only infrequently and upon a considerable sequence of errors, or upon a change in the sociometric configuration of the leading clique.

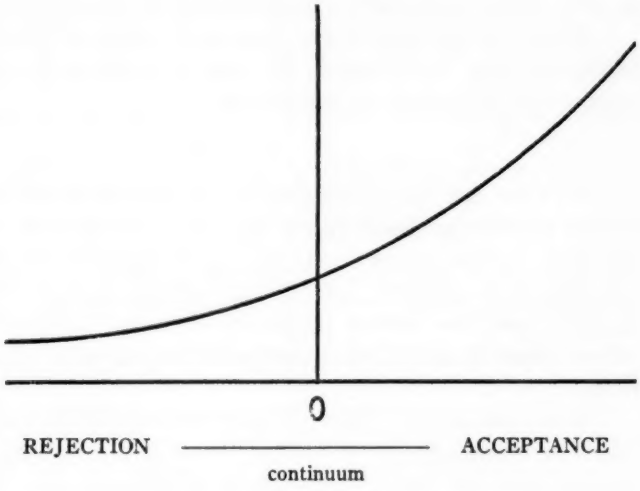
Let it be underlined at this stage that our concept of "leading subgroup" refers to a sociometric configuration rather than to formalized "power-alliance" among individuals.

Our general hypothesis may now be expressed very simply. The number

of tolerable errors (for which purge does not occur) increases as one moves, with respect to each specific individual, along the continuum of dislike-like. The relation may be presented as a form of an equilateral hyperbola.

FIGURE 1

THE HYPOTHESIZED RELATIONSHIP OF ERRORS TO THE SOCIOMETRIC VARIABLE



H. EXTERNAL INDICATORS

Evidently, we will not be given an opportunity to validify our theory by administering a sociometric test to the Soviet elites. Can we suggest, perhaps, observable indicators of the sociometric variable?

The sociometric feelings of the members with respect to each other will likely become translated into variable forms of behavior. We can hypothesize that if two members of the Presidium like each other rather intensely, their non-official and out-of-group interacts are likely to be frequent (20). Their associations will tend to occur over a great range of activities. And in reverse, if two members do not like each other, their interacts will be infrequent and confined to but a few activities.

This, we believe, is a testable statement. Soviet publications do report on various social, and sometimes even private, activities of the decision-makers. Also, the out-of-group interacts can be observed within the Soviet Union.

It would seem possible to verify this hypothesis, at least in part, by

studying the interaction patterns among the members *in the past*. Specifically by distinguishing between members that were retained on the Presidium as opposed to members who, at some stage, were purged. If our hypothesis is meaningful, we will expect to discover that some forms of associating may discriminate between purged and non-purged members. Thus, some interaction situations might be predictive of the sociometric relations which, in turn, might be predictive of impending purges (21).

While, having verified the hypothesis (if at all), individual proneness to purging may be estimated, the time at which such a purge is likely to occur could not thereby be established.

I. A Summary

We have said that it is expected of individual Bolshevik decision-makers to take stands upon issues facing the Party. At the same time, it is believed that each problem arises due to particular constellations of historical forces, and that each problem has but one correct solution. The supporters of incorrect positions become temporary deviants once a decision is reached. Self-criticism is the vehicle whereby reintegration of the group is accomplished.

Next, we argued that this self-criticism is interpreted by the non-mistaken individuals in the group. These interpretations are dichotomized (though this may be a slight oversimplification) into "honest" and "dishonest" errors and self-criticisms.

The group process is conducive to the formation of sociometric configurations which tend to break the seemingly monolithic structure of the decision-making group. The human relations among the members, as well as pressures from the outside, will both produce, and be produced by, feelings of likes and dislikes of varying individuals.

We proceeded to say that likes and dislikes will be functionally related to the interpretation of self-criticism and errors. Some form of an hyperbolic relation between tolerable number of errors and the sociometric feeling can be visualized.

In as much as the sociometric configurations themselves cannot be empirically observed, various forms of associating among the members in their out-of-group activities may be found predictive of the latent sociometric attitude. Some such interaction patterns may help in estimating proneness to purging as well as relative absence of proneness.

Even though established, the relationship would give us few, if any, clues as to the eventual timing of impending purges. Finally, removals of

members for incompetence would not be assessible from this relationship because such removals occur when an individual does make errors but is liked by others at the same time.

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    Dodd, Stuart C.—Nehnevajsa, Jiri. "Physical Dimensions of Social Distance", *Sociology and Social Research,* May-June, 1954.

21. For numerous exciting suggestions in discussing possible methods of studying the problem and testing our hypothesis, the author is indebted to Prof. Melvin DeFleur, now at the University of Indiana, Bloomington, Indiana.

THE FOREMAN-WORKER INTERACTION: A RESEARCH DESIGN*

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1. *The Foreman and His Problems*

Students of human behavior in the work situation have given considerable thought to the foreman, or first-line supervisor, and with good reasons. The foreman occupies a particular and critical position in the organizational structure;[1] he is neither management nor labor but rather sandwiches in between in a relatively ambiguous position. He is responsible toward management for carrying out policies and decisions which he has not helped to shape; his power is strictly limited; at the same time he finds himself in close contact with the worker, his problems, feelings and values. If he identifies himself with the worker he may fail to live up to management's expectation. If he identifies himself with management, he may lose leadership of the workers, thus forfeiting a most valuable tool for fulfilling his job. In all fairness the foreman has well deserved the attention given to his plight.

Here we are concerned with foreman-worker relationship. The research design we shall try to construct in order to investigate this relationship may be useful for exploring the foreman-management relationship, or the relations of the workers among themselves. At a later stage we may then be able to obtain a fairly accurate and complete picture of this social set-up of the plant. For the present, however, let us ignore the echelons above the foreman.

We should like to consider the foreman-worker relationship from two aspects, the actual and the normative.

The foreman actually behaves in a certain way (e.g. takes advice from his men, helps them solve personal problems); the worker in turn displays a given behavior (e.g. increases production, derives satisfaction from job). This is the actual aspect.

On the normative side we have instead an expression of values: e.g. the foreman believes that high wages are the most important factor for at-

*This paper is part of a program of research on human factors in production, supported by the Ford Foundation.

[1]See Miller, Delbert C., and Form, William M., *Industrial Sociology, an Introduction to the Sociology of Work Relations*, Harper & Brothers, New York, 1951, pp. 207 and ff.

tracting and keeping good workers; the worker puts job security first. The foreman thinks he should keep the worker at a distance; the worker thinks the foreman should behave in a friendly and permissive fashion.

One of the purposes of the research design we wish to introduce here is to include both the actual and the normative aspects under the same framework, so as to be able to investigate their interplay.[2]

Mead[3] pointed out that the single act can be considered as the focus of social behavior: This act takes the form of language communication. Moreno[4] amplified this concept by stressing the need to consider non-language communication as well. The observation schedule developed according to the principles described in this paper uses on the main pictorial stimuli accompanied by written (verbal) stimuli having an auxiliary function. In this sense our schedule follows Moreno's conception of interacting. In this connection it is interesting to note a growing interest on the investigation of pictorial vs. verbal ways of thinking and their possible influence on communication processes.[5]

We may consider the foreman-worker interaction as made up of two kinds of behavior. There is the behavior of the worker which is relevant to the foreman, such as disregarding instructions, seeking the supervisor's advice and the like. On the other hand there is the supervisor's behavior which is relevant to the worker; examples of this kind are: to help the worker understand, to praise him, to show anger toward the worker and so on.

There is an endless number of things the worker can possibly do which may be relevant to the foreman and an endless number of things the foreman can possibly do which may be relevant to the worker. A piece of research cannot possibly consider everything the foreman and the worker do which is of mutual relevance: some selection is obviously necessary. A problem is *how* to select the relevant actions which are to be observed and analyzed.

To that end it may prove advantageous to introduce certain theoretical concepts which have been developed for the study of interaction in general

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[2]Foa, Uriel G., Worker Satisfaction in Four Disciplinary Climates", to be published.

[3]McKinney, John C., A comparison of the Social Psychology of G. H. Mead and J. L. Moreno, *Sociometry, 10*: 1947, 338-349.

[4]Moreno, J. L., Sociometry and the Social Psychology of G. H. Mead, *Sociometry, 10*: 1947, 350-353.

[5]Cobliner, G. W.. Intra-communication and Attitude: A Methodological Note, *Journal of Psychology, 39*: 1955, 253-267.

and which apply in particular to the specific type of interaction taking place between foreman and worker in the specific work situation.

2. *Basic Aspects in Deviant and Non-Deviant Behavior*

The concept of rôle has been analyzed by Moreno,[6] Cottrell[7] and many others. We shall adopt here the formulation developed by Parsons.[8]

A person, or *ego,* plays in general different rôles towards different other persons, or *alters.* Thus our foreman is likely to display a quite different behavior according as to whether he is dealing with a worker, with the department chief, with his own children at home, with friends or with someone else. He might be quite a different, almost unrecognizable, person, in these various rôles. In the Parsonian sense the rôle is a compound concept shaped by alter's expectation of ego's behavior not less than by the ego himself.

The small social system formed by ego and alter is in perfect equilibrium when ego behaves as both he himself and alter think he should and alter gets a correct perception of ego's values and actual behavior. If the component parts of the rôle do not click so well, conflicts are likely to develop.

Later on we shall try to analyze in a more systematic fashion the relationships among the component parts of the rôle. For the present let us consider what may happen when a situation of conflict exists. Parson says that alter's unfulfilled expectation puts him in a position of strain; he may react in a "deviant" way, that is, in a manner which is likely to harm the functioning of the system. The categorization of deviant behavior may be suggestive of a classification of behavior in general. This, in turn, may indicate how to take a sample of the total relevant behavior. He suggests eight kinds of deviance, derived from three dichotomous alternatives, which combine in every possible way.[9]

These alternatives are aspects (or facets in the technical sense used by Guttman) of the deviant behavior, as it appears from the following brief description:

[6]Moreno, J. L., *Psychodrama,* Vol. I, Section V, "Rôle Theory and Rôle Practice," 152-176, Beacon House, Beacon, N. Y., 1945.

[7]Cottrell, Leonard S., and Gallagher, Ruth, *Developments in Social Psychology,* Sociometry Monograph, No. 1, Beacon House, Beacon, N. Y., 1941.

[8]Parsons, Talcott, *The Social System,* The Free Press, Glencoe, Illinois, 1951.

[9]For a brief but clear and penetrating analysis of the mechanism of deviance see James Olds' "Comment upon Parsons Paradigm for the Analysis of Deviance," *Lab Bulletin* (Laboratory of Social Relations), Harvard Univ., Vol. III, No. 4, May, 1951.

1. *Focus on person versus focus on norms*
   The deviant behavior may be directed towards the person as such, or else towards the abstract norm or the institution of which the person may eventually be a concrete symbol.
2. *Activity versus passivity*
   The offended alter may take the initiative into his hands in shaping the relationship to ego, or else he may leave the initiative to ego.
3. *Compulsive conformity versus compulsive alienation*
   Compulsiveness implies the existence of ambivalent motivation: one of the two horns of the dilemma is repressed—pushed into the subconscious. To keep the repression going requires a continuous watchfulness on the part of the subject. This may force him to follow a rigid pattern of overt behavior, since more flexibility would imperil the unstable equilibrium. When the positive component is at the surface and the negative component is repressed, Parsons speaks of *compulsive conformity*. In the contrary case there is *compulsive alienation*.

All the possible combination of these three aspects gave rise to eight types of deviant behavior. An example of such combination is: compulsive conformity, activity, emphasis on person.

We shall not deal here with the typology of deviance. Rather let us go back to the three aspects of deviant behavior listed above. The first two aspects (emphasis on person versus emphasis on norms; activity versus passivity) seem to fit well every kind of interactive behavior whether deviant or not. There is nothing in them which pertains to deviance. The very fact that ego either displays a great deal of activity in shaping his relationship to alter or assumes a passive rôle does not offer any indication of deviancy or non-deviancy in ego's behavior. The four combinations: active-deviant; active-non-deviant; passive-deviant; passive-non-deviant, all seem to be possible.

The same could be said of the focus, on person or on norm, in respect to deviancy. A particular focus does not seem, a priori, to be indicative of deviancy or of non-deviancy.

In the third aspect it seems we really have two elements. One element is *compulsiveness*, that is the existence of a repressed feeling lurking under the surface and the consequent status of tension and rigidity. The other element is the *direction* of behavior, that is, whether it seems *prima facie* to suit the purpose of the system or to run counter to it. It is important to note that the emphasis here is on the immediate quality of behavior rather

than on its ultimate effects. Embracing a person, for instance, may be seen as an integrative, positive form of behavior, yet the final effect of such an action may be disintegrative, especially if the person is of the opposite sex and holds a quite different and more restrained rôle expectation.

These labels, positive and negative, seem to refer to the *prima facie* aspect of behavior rather than to its consequences for the structure of the group.[10]

In conclusion: instead of considering compulsive conformity versus compulsive alienation as a single aspect, we may find it convenient to consider the *direction* of behavior (positive or negative; integrative or disintegrative) separately from the (presence or absence) of the compulsive element. Then again, direction is an element of behavior which is not specific to deviance but seems to fit any kind of behavior. Since the label "positive" or "negative" refers to the immediate aspect of behavior and *not* to its ultimate effects, it seems possible to have some behavior which is *both* negative and non-deviant or positive and deviant. It is likely, however, that the combining of deviancy and direction happens in a way different from the combining of deviancy and focus or activity.

In summing up: we may classify interpersonal behavior according to whether it is emphasizing person or norm; is active or passive; is positive or negative. The remaining category (compulsiveness or lack of same) seems to differentiate between deviant and non-deviant behavior.

These aspects of behavior have been treated as dichotomous for convenience, but they would perhaps better be described as qualitative variables.[11]

3. *The Formal Rôle*

Very many actions are possible for each combination of the three characterizing aspects we have mentioned (focus, direction and activity) yet

[10]Moreno, J. L., *Who Shall Survive?* Beacon House, Beacon, N. Y., 1934 and 1953; and Bales, Robert F., *Interaction Process Analysis, A Method for the Study of Small Groups,* Addison-Wesley Press, Cambridge, Massachusetts, 1950.

[11]In a conversation with the author, Dr. Louis Guttman stressed the need for a rigorous definition of the basic elements required for observing behavior and for a clarification of their ways of combining in given actions. For instance, the aspect "focus on norm—focus on person" may be a compound of two elements: focus on person and focus on norm, rather than a single element. To regard focus as a single element assumes that the more an action is focussed on person the less it is focussed on norm and vice versa. This in turn assumes that an action is more focussed on norms (or person) than a certain other action. When the two aspects are taken as separate elements, each one on its own right, the necessity of assumptions like these is obviated.

some of them only can possibly be done by the foreman and some other can be done by the worker. For instance, the foreman may give instructions but the worker is hardly likely to give instructions. Spanking or giving candies are kinds of action neither the worker nor the foreman are likely to indulge in *while on duty* (that is in the rôle of worker and foreman respectively) although both of them may possibly spank their children at home or give them candies. This indicates that another aspect has to be considered when choosing a sample of actions, that is the formal rôle of the actor (foreman, worker, father, friend, play-mate, etc.). In our case two formal rôles are considered: the foreman and the worker; each has his own set of possible actions and the two sets may or may not be partially overlapping.

4. *Proaction, Reaction, Interaction*

Now that categories for classifying actions have been defined in a general content-less manner, we may introduce another differentiation, the time sequence: actor A does something, actor B reacts in some way. Let us call, with Bales, A's action "proaction" and B's action "reaction". The complete sequence proaction-reaction shall be called "interaction". Let us make clear that the distinction between proaction and reaction is purely temporal, that is, the proaction precedes the reaction. Nothing else serves to differentiate them from each other—they are both action.

Of a similar nature is the distinction between actor A and actor B. The one who initiates the interaction we shall call proactor and the one who concludes it reactor.

In the interaction process, we may have therefore to consider three elements:—

1. The identity of the proactor and the reactor (e.g. the worker is the proactor, the foreman the reactor, or vice versa).
2. The nature of the proaction in terms of the three categories we defined.
3. The nature of the reaction in terms of the same categories.

This theoretical scheme applies of course to interaction, whatever its specific content.

We may now turn to the job of defining the kind of interaction we are interested in. It may prove expedient to borrow two concepts developed by Moreno,[12] Bales and others. One concept is the existence of a common framework or purpose to the interaction.[13]

[12]Moreno, J. L., *Das Stegreiftheater,* Gustav Kiepenheuer, Verlag, Berlin, 1923.

[13]Bales, Robert F., and Slater, Philip E., Rôle Differentiation in Small Groups, Harvard University, Rough Draft.

As we said we shall be concerned with interaction *relevant* to the production process carried out by one or both the actors and/or to the social relation between the actors. It is possible to imagine interaction between foreman and worker which does not possess this kind of relevancy or possesses it to an insignificant degree.

Suppose a dialogue of this kind takes place:
FOREMAN: It is quite hot today.
WORKER: Yes, but better than yesterday.

Such an exchange may usually be held to be of little relevance to the work situation (if not referring to bakery, smelter, etc.).

5. *Group Structure*

Another distinction made by Moreno[14] and further developed by Bales and others is between the structural state of relationships in a group and actual behavior going on among group members. These two aspects are quite different: one group may, for instance be closely integrated and solidal; yet this does not imply of necessity that group members will keep telling each other about their wonderful feeling of solidarity. Another group may be rather loosely connected and yet witness a considerable amount of integrative behavior among members.

Here we are interested in observing the structure of the relationships rather than the actual behavior. This focus on the underlying structure raises two problems: one theoretical and one methodological. The theoretical problem is whether categories which have been developed primarily for the analysis of actual dynamic behavior will prove suitable to an analysis of the structure. The methodological problem is about the technique required for observing group structure.

The only kind of action "the social scientist can observe, record, interpret and arrange in many ways . . . is the overt behavior of concrete human individuals. . . ." "Certain selected regularities in the distribution of types of interaction between separate human individuals in a group may be collected to yield generalizations about the social structure of the group."[15]

This seems to suggest that one possible way to explore the social structure would be to record and classify all the interaction going on inside the

[14]Moreno, J. L., *Who Shall Survive?*, Beacon House, Beacon, N. Y., 1934 and 1953.

[15]Bales, Robert F., *A Theoretical Framework for Interaction Process Analysis,* in Cartwright, Dorwin and Zander, Alvin, *Group Dynamics, Research and Theory,* Row Peterson & Co., Evanston, Illinois and White Plains, N. Y., 1953, p. 20 and ff.

group and then to draw certain inferences, not necessarily on the basis of the most frequent types of action.

The Recall of the Reaction

In fact interaction taking place between ego and alter is recorded in the mind of both actors. Such a recording is, however, selective. The findings of several studies indicate that people tend to expose themselves to, accept and *recall* messages and experiences which fit into their own psychological structure.[16] The process of recalling has not been wholly clarified but it seems to be little doubt that memory is selective and that selection is, in part at least, a function of the subject's needs and expectations.

Thus it seems that the types of interaction which are recalled are those compatible with the existing structure and contribute to reinforce it. Other types of interaction, insofar as they fail to modify the underlying structure, fall into oblivion. It seems that just by investigating the *recalled* interaction we should actually get a picture of the social relationships in the group in terms of the same categories which have been formerly applied to the analysis of actual behavior.

The acceptance of the assumption stated above, which is also sustained by some empirical evidence, offers a way of solving, in one stroke, the theoretical and the methodological problems.

It seems, however, that a significant methodological difference still remains between observation of actual interaction and observation of re-

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[16]See: Cartwright, Dorwin, "Some Principles of Mass Persuasion," Human Relations II: 197-292 (1949).

Sherif, Muzafer, *An Outline of Social Psychology,* Harper and Brothers, New York, 1949, p. 287.

Levine, Jerome M. and Murphy, Gardner, "The Learning and Forgetting of Controversial Material" in Swanson, Guy E., Newcomb, Theodore M. and Hartley, Eugene L. (Eds.), *Reading in Social Psychology,* Henry Holt & Co., New York, 1952.

Deese, James, *The Psychology of Learning,* McGraw-Hill, New York, 1952, pp. 178 f: "The Influence of Motivation upon Retention".

Lazarsfeld, Paul, Berelson, Bernard, Gaudet, Hazel, *The People's Choice,* Duell, Sloan and Pearce, New York, 1944.

Crafts, Leland W., Schneirla, Theodore C., Robinson, Elsa E., Gilbert, Ralph W., *Recent Experiments in Psychology,* McGraw-Hill, New York, 1950. Ch. XXII, Sect. II, "Investigations of the Effect of Attitudes upon Perception and Memory".

Taft, Ronald, "Selective Recall and Memory Distortion of Favorable and Unfavorable Material", The Journal of Abnormal and Social Psychology, vol. 49, No. 1, January, 1954.

called interaction. In observing actual behavior the proaction-reaction sequences are recorded by the observer as they happen.

In order to observe recalled interaction we shall need—it seems—a catalytic agent that will help the recalling by describing the situation. Let us clarify this with an example. Suppose we want to make observations on the recalling of the following interactive sequence:

The worker makes a mistake causing considerable waste of material. The foreman bullies him.

We could ask "Does that happen" or "Should that happen", as the case may be. It has been feared that this form of recalling a complete reaction would have proved difficult: the respondent may recall that the foreman bullies, but in different circumstances; he may admit that the worker can make mistakes but object to the foreman bullying.

Thus it has been thought more convenient to keep the proaction constant and to focus the questions on the reaction:

The worker makes a mistake, causing considerable waste of material. The foreman bullies him.

"Does your foreman behave this way?" or "Should the foreman behave this way?"

The proaction fulfills here the catalytic rôle; it defines one situation which may produce bullying by the foreman (making mistakes). Then the observation shall not refer to the proaction which is perhaps too vague to produce a recall, but to the *reaction* to the given proaction. We shall probably be interested in other different proactions which may produce bullying and shall make adequate observations.

We may also desire to observe the action "making mistakes"; then such action should appear as a reaction, as in the following sequence:

The foreman bullies the worker.
The worker makes mistakes.

Before proceeding further let us summarize what has been accomplished so far.

Starting from Parsons' categories of deviant behavior we have developed a set of categories for classifying the behavioral activities, whether deviant or not, taking place between foreman and worker. Further we have assumed that the actors will recall the actions which are consistent with the structural institutionalized relationship existing between them, while forgetting the actions which do not fit the structural framework. Finally, we have assumed that the recalling of a given action may be facilitated by pre-

senting this action within a given situation, that is, by specifying the hypothetic proaction which has preceded the reaction we wish the respondent to recall.

The analysis has been mainly concerned, so far, with interactional aspects of the situation. We shall now concentrate on the intra-actional aspects, that is, on describing the component elements *within* a given action.

7. *The Mode*

In regard to a given action we may consider its (perceived) actuality from the actors' point of view. For example: The worker perceives that he (the worker) is making a suggestion to the foreman. The foreman does not perceive that the worker is making a suggestion to him (the foreman). The perception of the two actors about the actuality of a given action may of course be different or similar.

We may also like to investigate whether this same action seems to be permissible or acceptable,[17] or desirable, or ought to be done to each one of the actors.

A question about the actuality of the action would be like:
Does the foreman do this and that?
A question about the *moral obligation* of the action would be like:
Ought the foreman to do this and that?
A question about *permissibility* would be:
Is it *permissible* for the foreman to do this and that?
A question about *desirability* would be:
Is it *desirable* that the foreman does this and that? Let us call actuality, necessity, desirability, permissibility *modes* of the action.

In the present design we shall consider two modes only, the actual and the "ought" mode, which are perhaps of special relevance. We shall have to keep in mind, however, that other modes are possible. The mode of actuality refers to the actor's perception of reality. The other modes refer to different aspects of the ideal situation which conform to the actor's normative values: we may call them *normative* modes. The "ought" mode expresses the norm in its strictest form and it is for this reason that we choose it among the various possible normative modes. The reasons for this choice will become more apparent, we hope, after we have dealt with differences among modes.

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[17]On the concept of "acceptability" see Riley, Matilda White, Riley, Jr., John, and Toby, Jackson, *Sociological Studies in Scale Analysis*. Rutgers University Press, New Brunswick, N. J., 1954, p. 205, note 29.

The concept of normative mode is rather similar to the concept of expectation, which has gained wide acceptance in the literature.[18] Expectation is usually referred to the other actor's action: A expects B to do something. In the more restricted sense of normative mode, however, expectation covers also ego perception of his own norm: A thinks he, A, should do something.

8. *The Perception of the Other Actor's Point of View*

Riley, Riley and Toby have observed[19] that in a two-person relationship there are at least four elements: self and other as A perceives them, self and other as B perceives them.[20] Let us clarify this concept with a simple example. Suppose we wish to consider the action: "the worker making suggestions to the foreman". Further let us consider the normative mode.

The worker thinks he ought to make suggestions. He also thinks that the foreman thinks the worker ought not to make suggestions. This is the worker perception of himself and of the foreman in respect of the action "the worker making suggestions", in the normative mode.

The foreman thinks the worker ought to make suggestions. He also thinks that the worker thinks the worker ought not to make suggestions. This is the foreman perception of himself and the worker in respect of the given action, in the normative mode.

A simple way of obtaining information about both perceptions could be the following: we shall ask the worker the question "ought the worker to make suggestions to his foreman?" and record his answer. Then we shall request the worker to guess what shall be the foreman's answer to the same question.

The two answers given by the worker supply information about his perception.

The same procedure is repeated for the foreman. First he is asked: "Ought the worker to make suggestions to his foreman?" Then he is requested to guess the worker's answer to the same question.

Let us call the person whose place is taken the *alias*.

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[18] See for instance Riley, Riley and Toby, op. cit. p. 198 and ff.

[19] Op. cit. p. 204, footnote 26.

[20] While this study was in preparation a paper applying a very similar approach to the study of engaged pairs has been published. See Kirkpatrick, Clifford and Hobart, Charles, "Disagreement, Disagreement Estimate and nonemphatic imputations for intimacy groups varying from favorite date to married", American Sociological Review 19: 10-19 (1954).

This concept of one actor putting himself in the place of the other actor, adopting the perceptive, or normative field of the other actor has been often mentioned in the literature. It is especially relevant in the psychodramatic and allied methods introduced by Moreno.[21] When a worker is asked to play the rôle of the foreman in a sociodramatic session he may play one of the following two rôles or even a mixture of both:

a. To play the foreman as he (the worker) perceives him.
b. To play the foreman as he (the worker) thinks the foreman should behave.

Both these possible rôles are included in the present research design. In case (a) the worker tries to put himself in the perceptual field of the foreman. The situation here is similar to guessing the foreman's answer to the question. In case (b) the worker gives expression to his own ideal image of the foreman's desired behavior. This corresponds to answering the question: "How ought the foreman to behave?"

Which one of these two possible rôles will be chosen by the worker depends on the worker's position in the specific problem the play is designed to solve.

It is possible that the present study will suggest which type of play or other therapeutic technique may be indicated in different interactive situations. Anyhow the research and therapeutic methods introduced by Moreno have been used already in a variety of work situations.[22]

9. *The Actors and the Respondents*

In our case worker and foreman are respondents, aliases and actors: we elicit responses from the worker and the foreman about the interaction of the worker and the foreman. It does not need to be always so. For instance we could investigate the responses of the parents to the interaction

[21]Moreno, J. L., Sociometry and the Cultural Order, *Sociometry, 6*: 1943, 299-344. Also as Sociometry Monograph, 1943, No. 2.

[22]See for instance: Franks, T. W., A Note on Rôle Playing in an Industrial Setting, *Group Psychotherapy*: *5*: 1952, 59-63.

Maier, Norman R. F., *Principles of Human Relations, Applications to Management,* John Wiley, New York, 1952.

Miller, D. C., Introductory Demonstration and Application of Three Major Uses of Rôle Playing for Business and Government Administrators, *Sociometry, 14*: 1951, 48-58.

Moreno, J. L., and Borgatta, E. F., An Experiment with Sociodrama and Sociometry in Industry, *Sociometry, 14*: 1951, 71-104.

of their children among themselves. It is quite common for two people to exchange views on how two other different people get along.

We have to be careful in differentiating among *three* aspects:
The respondent: the person giving the answer.
The alias: the person whose "field of perception" is given by the respondent.
The actor (proactor or reactor): the person doing the proaction or the reaction.

These three aspects may take up the same values (as in our case: worker and foreman) or may take up different values or any combination of these two cases. The special case when the same people are respondents, aliases and actors is of interest in the study of interaction because here we get the information about the interaction from the actors themselves and according to reciprocal mutual perception.

10. *The Concept of "Simple Difference"*

Now let us go back to the concept of guessing the other fellow's answer in an attempt to clarify the strategic function of such an observation. We ask the respondent a given question and note his answer. Then we ask him to guess how the other respondent will answer the same question. Thus we compare the two responses to the question given *by one of the respondents:* in the first response he gives his own view, in the second one he tries to guess the answer of other respondent. When the two responses are the same we may conclude that the respondent does not perceive any difference between his own and the other fellow's view in regard to the particular behavior mentioned in the question. When the two responses are different the respondent perceives a difference between himself and the other respondent; the respondent feels a certain lack of integration between himself and the other member of the dyad. Thus let us call this difference *integrative.*

Now let us compare the respondent guess of *the other* fellow's answer given—on the same question—by the other fellow speaking for himself. Here we compare the responses of *two* different respondents. Again we may find a difference: the first respondent has not succeeded in his guessing, he does not know what his mate exactly thinks. If we prefer we may say that the first respondent lacks in empathy.[23] It seems that we have here a

[23]Several studies of empathy and its correlates have been published. See for instance Patton, Wendell M., "Studies in Industrial Empathy: III. A Study of Supervisory Empathy in the Textile Industry". *Journal of Applied Psychology, 38*: 285-288 (1954).

problem of communication: the channel from the first respondent to the second one is to some extent blocked;[24] let us call this difference *communicative.*

In conclusion: when we compare what John says speaking for himself with what he says guessing Jack's answer we have an integrative difference.

When we compare what John says speaking for himself with what Jack says guessing John's answer we have a communicative difference.

From the above it becomes readily apparent that in a dyad there are two possible communicative differences, one from actor John to actor Jack and the second one from actor Jack to actor John. In other words John may succeed in guessing Jack's point of view, while Jack does not succeed in guessing John's point of view.

The same is true in regard of the integrative differences; there are two: one as perceived by John and one as perceived by Jack.

Each difference, integrative or communicative, can be seen, therefore, as belonging to one of the two actors.

When both the integrative and communicative differences of the same actor are non-existent then there is no difference between the point of view of the two actors on the same mode. That is: when John perceives no difference between himself and Jack and when John's guess of Jack's point of view is correct, then John and Jack have the same point of view. The contrary does not need to be true: integrative and communicative differences may exist even when the two actors have the same point of view on a given mode. In such case however we must have either *both* an integrative and a communicative difference or none.[25]

In the integrative difference we are comparing answers given (to the same question) by the *same* respondent on the same mode. The differentiating element is the *perceptual field*: one time the respondent answers expressing his own point of view and the second time the same respondent answers by giving his own perception of the other actor's point of view.

In the communicative difference the perceptual field and the mode are the *same,* but the *respondent* changes.

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[24]This does not of necessity implicate that also the channel from the second to the first is blocked.

[25]Although this produces some difficulties we have preferred, at this stage, to avoid the use of symbols for indicating the various kinds of differences and their mutual relationships. It is hoped to present a more formal treatment of this aspect of the study in another paper dealing with the procedure for analyzing the observations described in this paper.

We shall call these differences, where one element only changes in the two compared observations, simple differences.

Another simple difference should be mentioned: there the respondent and the perceptual field are constant, while the mode changes. This is the difference between what is perceived it *is* done and what is perceived it *ought* to be done. The meaning of this difference varies according to whether it refers to an action done by the respondent or by the other actor. When the action is done by the respondent such a difference indicates that the respondent feels he is not behaving in conformity to his own norm; there is a lack of integration within the personality of the actor. Let us call this the *intrapersonal* difference. When the respondent is not the actor a difference in mode indicates that the respondent perceives the behavior of the actor as different to the *respondent's* own norm. The respondent in effect says: I feel the actor is behaving in a way that is different from what I think it should be the right way of behaving. Here the respondent suffers a *deprivation*: he does not get from the actor the kind of behavior he (the respondent) feels entitled to. Let us call this the deprivative difference.[26] This seems to be the kind of difference which may generate, in the respondent, deviant behavior in the Parsonian sense.

11. *Purposiveness of Behavior and its Facets*

Parsons[27] and others have pointed out that, within the framework of their theory of action, behavior should be analyzed in terms of four categories. One of these categories is the *purpose* of behavior, the end toward which the behavior is directed.

Many forms of behavior are oriented toward achieving some goal: in such case behavior is "*a mean to an end* rather than an end *in itself*."[28] Yet it has been observed that certain forms of behavior, especially abnormal ones, do not seem to be geared toward some discernible goal.[29]

Maier[30] differentiates between situations where the behavior is moti-

[26] There is another possible simple difference which consists in the respondent perception of the other actor's intrapersonal (or deprivative) difference. This was pointed out to the author by Dr. Louis Guttman.

[27] Parsons, Talcott and Shils, Edward A. (Eds.), *Toward a General Theory of Action*, Harvard University Press, Cambridge, Mass., 1952, p. 53.

[28] Maier, Norman R. F., *Frustration, The Study of Behavior without a Goal*, McGraw-Hill, New York, 1943, p. 10.

[29] Maier, op. cit. p. 14.

[30] Maier, op. cit. p. 92.

vated, goal oriented and situations where it is apparently purposeless. In the first case behavior is flexible and changes according to the requirements of the situation and of the goal. In the second case behavior is rigid and repetitive. The second kind of behavior if found primarily is frustration. In conclusion: when the actor is motivated his behavior is a mean to an end; when the actor is frustrated his behavior is an end in itself.

We shall now try to find out some at least of the meaningful aspects—or facets—of behavioral goals in our situation of worker-foreman interaction.[31]

This problem is of course quite different from the analysis of facets of behavior outlined in section 2 of this paper. There we looked for elements in order to describe *what* is being done. Here we are searching for elements for describing *what is the goal* of what is done, including the case where the action itself is the goal. The perceptive element, which played its full part in describing behavior, will also influence the goal of behavior. The actor may perceive some specific goal for his own action, while other people may ascribe to him quite different purposes. This is parallel to the distinction between what the actor perceives he does and what other people perceive he does.[32]

It is now necessary to choose the aspects (or facets) of the goal we wish to investigate and different values or elements within each aspect. We shall use two facets: the nature of the goal and the source of it. Let us first consider the nature of the goal. One kind of goal is to obtain approval, praise, reward. A second kind is to avoid disapproval, blame, punishment. Two other kinds are possible: to obtain punishment and to avoid approval but we shall not include them in the present study. These goals have a source: praise and blame, reward and punishment come from somewhere and, in general, from somebody. Some of these possible sources are located outside the work situation, such as the family of the subject, some of his friends, etc. We shall concentrate on investigating some of the sources within the work situation, namely: management, the workers, and the subject himself. Even within the plant it would be possible to locate other sources

[31]The following analysis has been done in collaboration with Dr. Louis Guttman. To him is due, in particular, a solution to the problem of describing by the same elements both purposiveness and the lack of it.

[32]A similar concept is expressed by Maier (op. cit. p. 11) who says: "Perception may influence behavior in a problem situation to the extent that a problem may have different appearances or interpretations for various individuals."

or indicate the sources in a more specified manner. For example: a certain worker, a foreman, a department chief and so on.

It is plain that the selection of certain facets and of certain elements for each facet is somewhat arbitrary. The technique of facet analysis, as developed by Louis Guttman, indicates whether enough facets and elements of facets have been included in order to "explain" (that is to reproduce) the situation. Thus, after the analysis of the observations has been carried out, we shall know how good our choice has been.

At the same time facet selection shall be dictated by the interest of the researcher. Another desirable criterion of choice is the ability of the facet design to express certain concepts which are felt to be important to the understanding of the subject matter. Such a test, in our case, can be to express Maier's concept of frustration in terms of the facets so far defined. In frustration the goal of the action is, so to speak, the action itself: hence the *source,* is within the actor. In section 2 actions were classified, *inter alia,* according to whether they are positive or negative. An action is negative when its apparent immediate effect is to hamper production or to create tension among the actors. It seems that a *negative* action whose goal is to give reward (or to avoid punishment) to the actor by *himself* fits the concept of frustration. For example: the foreman bullies the worker in order to get self reward, not for any other reason, apparent or real, but only because of the pleasure of bullying. Thus aggressive behavior seem to be a type of frustration. We may tentatively conclude that negativeness and "source within the actor" are two sufficient conditions for frustrated behavior. But are they necessary?[33] The condition, "source within the actor", seems to be necessary.

In regard to the first condition, negativeness, serious doubts remain: Louis Guttman suggests that *sublimation,* positive behavior with source (of reward or punishment) within the actor, should also be considered as a kind of frustration. In any case the two conditions listed above (negativeness and internal source) produce eight possible types of frustrated action when combined in every possible way with the remaining three dichotomous facets (focus on norms or person; activity or passivity; obtaining reward or avoiding punishment). The first two of these facets (focus and activity) are borrowed from Parsons' paradigm of deviance. Therefore it is not sur-

[33]The author is grateful to Mr. Izhak Lewin of the Israel Institute of Applied Social Research for a discussion clarifying this point.

prising, although of interest, that the types of frustration thus defined bear much resemblance to Parsons' typology.

In selecting the sources of the goal we have excluded those outside the work situation. Yet, while keeping within the limits of the work situation, we have overstepped the boundaries of the worker-foreman interaction. The need to cover a wider field in order to understand the interaction seems implicit in the analysis of the interaction we have carried out so far.[34]

One of the four possible simple differences is the integrative one: that is when the respondent perceives a difference between his own view and the view of the other actor (as the respondent perceives it). In such case the goal of the respondent must lie outside the interaction, since goals *within* the interaction are poorly served by such a difference. Let us explain with an example. The foreman thinks that the worker should be discouraged from making suggestions. He also thinks that the worker feels he should make suggestions. The foreman may reject the worker's view for many reasons: because that hurts his own feeling of superiority, because he is afraid management would disapprove of it, because he does not want to be bothered, etc. But he cannot refuse to agree with worker *because* he is anxious to please him or afraid of displeasing him. In such instance a goal internal to the interaction is ruled out.

12. *The Group*

In general people interact when they belong to the same group: as a rule the worker interacts with the foreman of his group and not with the foreman of some other group of workers. Thus the group to which the people concerned belong is an aspect which should be considered especially when the study covers more than one group, or when different sub-groups are differentiated within the same group.

13. *A Summary View of the Relevant Aspects*

We have described the aspects of the interaction that we wish to consider. For each aspect we have chosen a number of elements. Any possible combination of these elements, taking one element for each aspect at a time defines an observation which can be made.

We shall now give a list of the different aspects, which have been analyzed in detail in the preceding sections, and of their elements.

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[34]This is also stressed in Riley, Riley ,and Toby, op. cit. p. 199, note 21, quoting Herbert Blumer . . . "The human being as an actor takes into account many other things than expectation of the others . . ."

a. The Respondent. Is the person who answers the question. In our case: a given foreman and a given worker.
b. The Formal Rôle of the Respondent, such as father, friend, club-member, manager. In our case: the foreman and the worker.
c. The Group of the Respondent. In our case we shall have as many groups as gangs of workers, each gang being supervised by a given foreman.
d. The Alias. The person to whom the Respondent is attributing the answer. In our case: a given foreman and a given worker.
e. The Formal Rôle of the Alias. In our case the foreman and the worker.
f. The Group of the Alias.
g. The Proactor, the person doing the proaction. In our case a given foreman and a given worker.
h. The Formal Rôle of the Proactor. In our case the foreman and the worker.
i. The Group of the Proactor.
j. The Reactor, the person doing the reaction. In our case: a given foreman and a given worker.
k. The Formal Rôle of the Reactor. In our case: the foreman and the worker.
l. The Group of the Reactor.
m. The Proaction, as defined by its three aspects: Focus, Direction and Activity.
n. The Reaction, as defined by its three aspects: Focus, Direction and Activity.
o. The Goal of the Reaction, as defined by its two aspects: Nature and Source.
p. The Mode: Actual and Normative what *is* the action and what *ought to be* the action.

14. *Conclusion*

Most of the aspects or facets are dichotomous. Even so the number of possible combinations is extremely large. Facet design shows that it is possible to construct a sample and to collect observation on the sample which shall yield information on the whole subject matter.

The particular sample prepared for this study will be presented in another paper. A third paper will deal—it is hoped—with the techniques for analyzing the observations. This will be an application facet analysis to the particular requirements of the study of interaction.

ANNOUNCEMENTS

A New International Journal

The rapid development of sociometry, group psychotherapy and psychodrama throughout the world, reaching far beyond the academic centers and university laboratories into various fields of application, education, industry, administration, mental hospitals, religious institutions and government agencies, has made it necessary to check an uncontrolled development. Our investigations have shown that, although these methods have a universal core, they require adaptation to each cultural milieu. Sociometric Institutes are being organized in all countries which are open to democratic processes and the Journal will be an international forum for publishing and exchanging views held by the various authorities in all parts of the world.

Articles published in the International Journal may be submitted either in *English, French, German, Italian* or *Spanish* and must be properly typewritten and submitted in triplicate. They should be addressed to the Editor in Chief, J. L. Moreno, P.O. Box 311, Beacon, N. Y., USA. It is hereby understood that all articles are accepted for exclusive publication in the International Journal and become the property of Beacon House.

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American Society of Group Psychotherapy and Psychodrama

The Mid-Annual Meeting, Eastern and Michigan Section is to take place at the Moreno Institute, 101 Park Avenue, New York City, on December 9th and 10th. For further information write: Program Chairman, Mr. Lewis Yablonsky, 90 Morningside Drive, New York 27, New York.
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